# Service Manual

# ViewSonic Q9-1
# Q9b-1

## Model No. VS10863-1W
## 19” Color TFT LCD Display

(Q9-1_Q9b-1_SM Rev. 1a Dec. 2005)

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# Revision History

| Revision | SM Editing Date | ECR Number | Description of Changes | Editor |
|---|---|---|---|---|
| 1a | 12/19/2005 | | Initial release | Jamie Chang |
| | | | | |
| | | | | |
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| | | | | |
| | | | | |

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# 1. Precautions and Safety Notices

## 1-1. Appropriate Operation

(1) Turn off the product before cleaning.

(2) Use only a dry soft cloth when cleaning the LCD panel surface.

(3) Use a soft cloth soaked with mild detergent to clean the display housing.

(4) Use only high quality and safety approved AC/DC power adapter.

(5) Disconnect the power plug from AC outlet if the product is not used for a long period of time.

(6) If smoke, abnormal noise or strange odor is present, immediately switch the LCD display off.

(7) Do not touch the LCD panel surface with sharp or hard objects.

(8) Do not place heavy objects on the LCD display, video cable, or power cord.

(9) Do not use abrasive cleaners, waxes or solvents for your cleaning.

(10) Do not operate the product under the following conditions:

- Extremely hot, cold or humid environment.
- Areas susceptible to excessive dusts and dirt.
- Near any appliance generating a strong magnetic field.
- Place in direct sunlight.

## 1-2. Caution

No modification of any circuit should be attempted. Service work should only be performed after you are thoroughly familiar with all of the following safety checks and servicing guidelines.

## 1-3. Safety Check

Care should be taken while servicing this LCD display. Because of the high voltage used in the inverter circuit, the voltage is exposed in such areas as the associated transformer circuits.

## 1-4. Power Supply Requirements

The external power converter for this display utilizes AC and DC cords, AC cord is detachable, but DC cord is permanently attached. Any attempt to replace another adapter could result in serious problem on the display.

## 1-5. LCD Module Handling Precautions

### 1-5.1 Handling Precautions

(1) Since front polarizer is easily damaged, pay attention not to scratch it.

(2) Be sure to turn off power supply when inserting or disconnecting from input connector.

(3) Wipe off water drop immediately. Long contact with water may cause discoloration or spots.

(4) When the panel surface is soiled, wipe it with absorbent cotton or other soft cloth.

(5) Since the panel is made of glass, it may break or crack if dropped or bumped on hard surface.

(6) Since CMOS LSI is used in this module, take care of static electricity and insure human earth when handling.

(7) Do not open nor modify the Module Assembly.

(8) Do not press the reflector sheet at the back of the module to any directions.

(9) In case if a Module has to be put back into the packing container slot after once it was taken out from the container, do not press the center of the CCFL Reflector edge. Instead, press at the far ends of the CFL Reflector edge softly. Otherwise the TFT Module may be damaged.

(10) At the insertion or removal of the Signal Interface Connector, be sure not to rotate nor tilt the Interface Connector of the TFT Module.

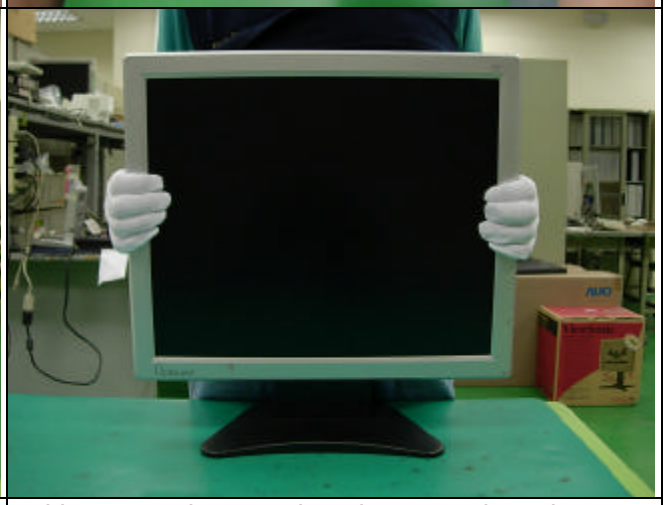
(11) After installation of the TFT Module into an enclosure (LCD monitor housing, for example), do not twist nor bend the TFT Module even momentary. At designing the enclosure, it should be taken into consideration that no bending/twisting forces are applied to the TFT Module from outside. Otherwise the TFT Module may be damaged.

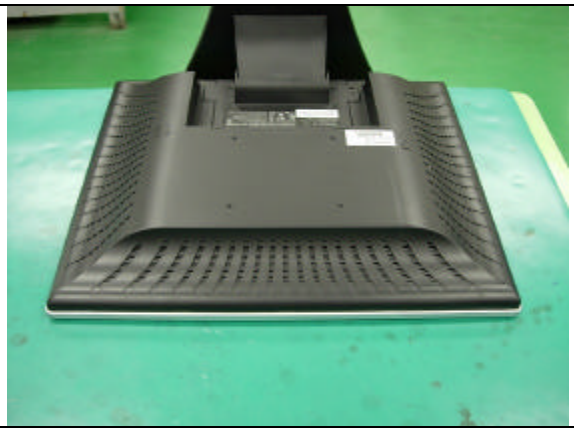
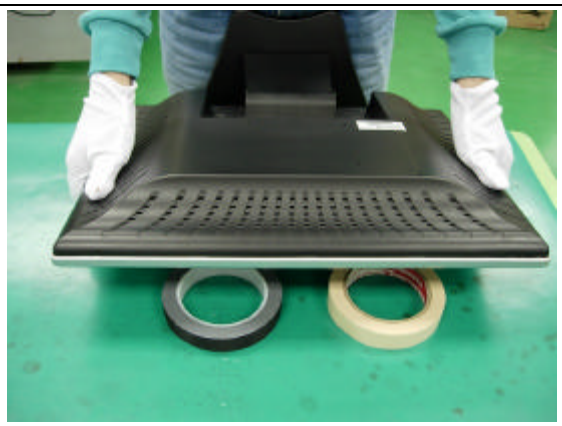
(12) Cold cathode fluorescent lamp in LCD contains a small amount of mercury. Please follow local ordinances or regulations for disposal.

(13) Small amount of materials having no flammability grade is used in the LCD module. The LCD module should be supplied by power complied with requirements of Limited Power Source (IEC60950 or UL1950), or be applied exemption.

(14) The LCD module is designed so that the CFL in it is supplied by Limited Current Circuit (IEC60950 or UL1950). Do not connect the CFL in Hazardous Voltage Circuit.

## 1-5.2 Handling and Placing Methods

| Correct Methods: | Incorrect Methods: |
|---|---|
| Only touch the metal frame of the LCD panel or the front cover of the monitor.Do not touch the surface of the polarizer. | Surface of the LCD panel is pressed by fingers and that will probably cause "Mura". |
|  |  |
|  |  |
| Take out the monitor with cushions | Taking out the monitor by grasping the LCD panel.That will probably cause "Mura". |
|  |  |

| | |
|---|---|
| Place the monitor on a clean and soft foam pad. | Placing the monitor on foreign objects. That will probably scratch the surface of the panel or cause “Mura.” |
|  |  |
| | The panel is placed facedown on the lap. That will probably cause “Mura.” |
| |  |

# 2. SPECIFICATIONS

## General Specification

| | |
|---|---|
| Test Resolution & Frequency | 1280x1024 @ 60Hz |
| Test Image Size | Full Size |
| Contrast and Brightness Controls | Factory Default:<br>Contrast = 60%, Brightness = 100% |

## Video Interface

| | |
|---|---|
| Analog Input Connector | DB-15 (Analog), refer the appendix A |
| Default Input Connector | Defaults to the first detected input |
| Video Cable Strain Relief | Equal to twice the weight of the monitor for five minutes |
| Video Cable Connector DB-15 Pin out | Compliant DDC 1/2B |
| Video Signals | 1. Video RGB (Analog)<br>Separate, |
| Video Impedance | 75 Ohms (Analog) |
| Maximum PC Video Signal | 950 mV with no damage to monitor |
| Maximum Mac Video Signal | 1250 mV with no damage to monitor |
| Sync Signals | TTL |
| DDC 1/2B | Compliant with Revision 1.3 |
| Sync Compatibility | Separate Sync |
| Video Compatibility | Shall be compatible with all PC type computers, Macintosh computers, and after market video cards |
| Resolution Compatibility | 640 x 350, 640 x 480, 720 x 400 (640 x 400), 800 x 600, 832 x 624, 1024 x 768, 1280 x 720, 1280 x 1024, |
| Exclusions | Not compatible with interlaced video |

## Horizontal / Vertical Frequency

| | |
|---|---|
| Horizontal Frequency | 30 – 82 kHz |
| Vertical Refresh Rate | 50 – 75 Hz. |
| Maximum Pixel Clock | 140 MHz |
| Sync Polarity | Independent of sync polarity. |

## POWER SUPPLY

| | |
|---|---|
| Internal Power Supply | Part Number: HOAU172001 |
| Input Voltage Range | 90 to 264 VAC |
| Input Frequency Range | 47.5 to 63 Hertz |
| Over Current Protection | 5 A TYPICAL AT 5VDC |
| Leakage Current | 3.5MA (MAX) AT 254VAC / 60HZ |
| Efficiency | 75 % TYPICAL AT 115VAC FULL LOAD |
| Power Dissipation | 45 WATTS (TYP) |
| Max Input AC Current | 1.5 ARMS @ 90VAC, 1 ARMS @180VAC |
| Inrush Current (Cold Start) | 50 A @ 120VAC, 90 A(MAX) @220VAC |
| Power Consumption | ON Mode < 45 W (max) / 35 W (typ)<br>ACTIVE OFF < 1 W |
| Recovery Time | ON Mode = N/A, ACTIVE OFF < 3 sec |

**Timing Table**

| Item | Timing | Analog |
|---|---|---|
| 1 | 640 x 350 @ 70Hz, 31.5kHz | Yes |
| 2 | 640 x 400 @ 70Hz, 31.5kHz | Yes |
| 3 | 640 x 480 @ 60Hz, 31.5kHz | Yes |
| 4 | 640 x 480 @ 67Hz, 35.0kHz | Yes |
| 5 | 640 x 480 @ 72Hz, 37.9kHz | Yes |
| 6 | 640 x 480 @ 75Hz, 37.5kHz | Yes |
| 7 | 720 x 400 @ 70Hz, 31.5kHz | Yes |
| 8 | 800 x 600 @ 56Hz, 35.1kHz | Yes |
| 9 | 800 x 600 @ 60Hz, 37.9kHz | Yes |
| 10 | 800 x 600 @ 75Hz, 46.9kHz | Yes |
| 11 | 800 x 600 @ 72Hz, 48.1kHz | Yes |
| 12 | 832 x 624 @ 75Hz, 49.7kHz | Yes |
| 13 | 1024 x 768 @ 60Hz, 48.4kHz | Yes |
| 14 | 1024 x 768 @ 70Hz, 56.5kHz | Yes |
| 15 | 1024 x 768 @ 72Hz, 58.1kHz | Yes |
| 16 | 1024 x 768 @ 75Hz, 60.0kHz | Yes |
| 17 | 1280 x 1024 @ 60Hz, 63.4kHz | Yes |
| 18 | 1280 x 1024 @ 75Hz, 79.97kHz | Yes |
| 20 | 1280x 720 @ 60Hz, 45kHz (HDTV) | Yes |

**User Presets**

Number of User Presets (recognized timings) Available: 10 presets total in FIFO configuration

## Panel Characteristics

| | |
|---|---|
| Model number | “HANNSTAR AND HSD190ME12-A02 |
| Type | “TN PANEL TECHNOLOGY” |
| Active Size | 376.32 (H) x 301.056 (V) |
| Pixel Arrangement | RGB Vertical Stripe |
| Pixel Pitch | 0.294 mm |
| Glass Treatment | ANTI GLARE (HARD COATING 3H) |
| # of Backlights | 4 CCFL EDGE-LIGHT (2 TOP / 2 BOTTOM) |
| Backlight Life | 40,000 HOURS (MIN) |
| Luminance – Condition:<br>CT = 6500K, Contrast = Max,<br>Brightness = Max | 260 cd/m2 (Typ after 30 minute warm up)<br>200 cd/m2 (Min after 30 minute warm up) |
| Brightness Uniformity | 75 % Entire Area (minimum) |
| Contrast Ratio | 500:1 (Typ), 350:1 (Min) |
| Color Depth | 16 million colors (x bit panel) |
| Viewing Angle (Horizontal) | 140 deg @ CR>10,  160 deg @ CR>5 (typ) |
| Viewing Angle (Vertical) | 130 deg @ CR>10,  150 deg @ CR>5 (typ) |
| Response Time<br>10%-90% @ Ta=25°C | 12 ms (Tr =3.6 ms, Tf = 8.4 ms)  (Typ)<br>25ms  (Max) |
| Panel Defects | Please see Panel Quality Specifications. |

| | |
|---|---|
| **2nd Source** Panel | "CPT and CLAA190EA03 |
| Type | "Panel Technology" |
| Active Size | 376.32 (H) x 301.056 (V) |
| Pixel Arrangement | RGB Vertical Stripe |
| Pixel Pitch | 0.294 mm |
| GLASS TREATMENT | Anti Glare (Hard coating 3H) |
| # OF BACKLIGHTS | 4 CCFL edge-light (2 top / 2 bottom) |
| BACKLIGHT LIFE | 40,000 Hours (Min) / 50,000 Hours (typ) |
| Luminance –<br>Condition:<br>CT = 6500K, Contrast = Max, Brightness = Max | 250 cd/m2 (Typ after 30 minute warm up)<br>200 cd/m2 (Min after 30 minute warm up) |
| Brightness Uniformity<br>Contrast Ratio | 75 % Entire Area (minimum)<br>500:1 (Typ), 400:1 (Min) |
| Color Depth | 16 million colors (x bit panel) |
| Viewing Angle (Horizontal) | 150 deg @ CR>10, 170 deg @ CR>5 (typ) |
| VIEWING ANGLE (VERTICAL) | 130 deg @ CR>10, 170 deg @ CR>5 (typ) |
| Response Time<br>10%-90% @ Ta=25°C | 12 ms (Tr= 5 ms, Tf = 7 ms) (Typ)<br>25 ms (Tr= 10 ms, Tf = 15 ms) (Max) |
| Panel Defects | Please see Panel Quality Specifications. |

## IMAGE PERFORMANCE

### Factory Defaults

| Item | Defaults | Item | Defaults |
|---|---|---|---|
| Contrast | 60% | 720x400/640x400 | 720x400 |
| Brightness | 100% | Resolution Notice | Enabled |
| Color Temperature | 6500K | Volume | N/A |
| Sharpness | 50% | Balance | N/A |
| OSD H. Position | 50% | Treble | N/A |
| OSD V. Position | 50% | Bass | N/A |
| OSD Time Out | 20 Sec | | |
| OSD Blending | 100% | | |

### Dimension

| | |
|---|---|
| Width | 430 mm |
| Height | 435 mm |
| Depth | 194 mm |
| Monitor Weight | 4.4 kg / 9.68 lbs |

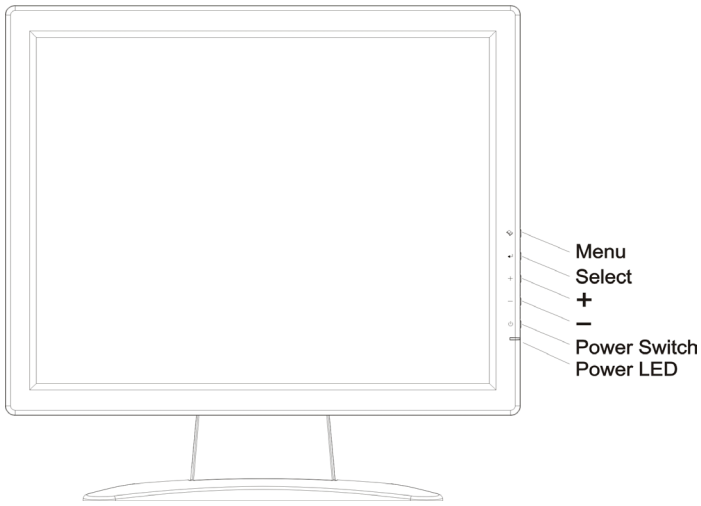
### Ergonomics

| | |
|---|---|
| Tilt Up | +19° +/- 1° DEGREES MINIMUM |
| Tilt Down | -1 °+/- 1° degrees |

## 3. Front Panel Function Control Description

### 3-1 Location of Controls

### Display Controls




**1) MENU：**

Enter to the OSD adjustment menu. It also used for go back to previous menu for sub-men and the change data don't save to memory.

**2) SELECT:**

To confirm the current selection. It also used for go back to previous menu for sub-menu, and the change data will be saving to memory.

If pressed when menu is not active, VOLUME is adjusted.

**3) ADJUST ＋:** (RIGHT)

To scroll up in sub menu or to increase value of selected item.

If pressed when menu is not active, BRIGHTNESS is adjusted.

**4) ADJUST —:** (LEFT)

To scroll down in sub menu or to decrease value of selected item

If pressed when menu is not active, AUTO CINFIG is adjusted.

**5) POWER SWITCH:**

Pushing the power switch will turn the monitor on. Pushing it again to turn the monitor off.

**6) POWER INDICATOR:**

The LED will light with green color in normal on state, and will light with flash in power saving mode.

## 3-2 OSD Menu Controls

# Screen Adjustment Operation Procedure

**1) Entering the screen adjustment**

The setting switches are normally at stand-by. Push the MENU button once to display the main menu of the screen adjustment. The adjustable items will be displayed in the main menu.

**2) Entering the settings**

Use the Adjust － and Adjust ＋ buttons to select the desired setting icon and push the SELECT button to enter sub-menu.

**3) Change the settings**

After the sub-menu appears, use the Adjust － and Adjust ＋ buttons to change the setting values.

**4) Save**

After finishing the adjustment, push the SELECT button to memorize the setting.

**5) Return & Exit the main menu**

To go back to the previous menu, push the MEMU button.

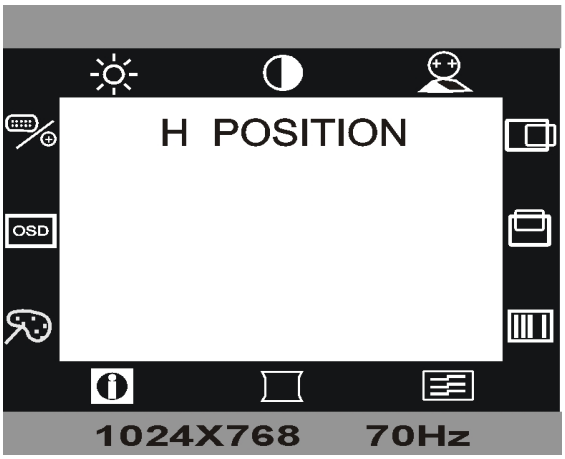
# The Screen Adjustment

### Main Menu

The OSD main menu (Figure 8-1) is displayed on screen when MENU key is pressed. The OSD menu is a combination of graphic and text display. The column inside the OSD menu will show information of input image. Second column beneath OSD menu shows the item selected.

The LEFT and RIGHT keys are used to scroll through items within the menu. The selected item is highlighted as the scrolling moves along. The SELECT key is used to activate the highlighted item during this state.

Figure 8-1



# OSD adjusting and Controls

**BRIGHTNESS**

Setup the brightness of the panel.

**CONTRAST**

The Contrast menu item is used to adjust image contrast.

**AUTO CONFIG**

There are two items: AUTO ADJUST and AUTO COLOR. Use the Adjust [+] and [-] key to scroll up and down in menu, and then press the SELECT key to start this function. If the MENU key is pressed, the main menu is re-displayed and nothing is changed.

AUTO ADJUST: Used to perform automatic configuration of the phase、clock、vertical and horizontal positioning.

AUTO COLOR: It is used to adjust the gain and offset of the Red, Green and Blue channels on the ADC automatically.

**H-POSITION**

H-Position is used to adjust the horizontal image position manually. A slider with current value is displayed.

**V-POSITION**

V-Position is used to adjust the vertical image position manually. A slider with current value is displayed.

**CLOCK**

Reduce vertical stripes in the screen image.

**PHASE**

Reduce horizontal stripes in the screen image.

**SHARPNESS**

This can adjust the video quality to be sharp or blur (special for text mode).

**INFORMATION**

The "INFORMATION" menu provides the user with detailed information regarding the current input format and version (include resolution, vertical /horizontal frequency, pixel clock and software version).

**COLOR**

Configure the image color. There are three items : 9300K、6500K、USER MODE.
9300K: The item "9300K" is used to default 9300K color temperature.
6500K: The item "6500K" is used to default 6500K color temperature.
USER MODE:
RGB ADJUST:
-RED: The item "RED" is used to adjust the gain of red channel in ADC.
-GREEN: The item "GREEN" is used to adjust the gain of green channel in ADC.
-BLUE: The item "BLUE" is used to adjust the gain of blue channel in ADC.

**OSD MENU**

There are five items: OSD H POSITION, OSD V POSITION, OSD BLENDING, OSD TIME OUT and LANGUAGE.
OSD H POSITION: The item "OSD H Position" is used to setup the OSD menu H position.
OSD V POSITION: The item "OSD V Position" is used to setup the OSD menu H position.
OSD BLENDING: To adjust the blending of the OSD MENU.
OSD TIME OUT: "OSD Time out" is used to set the timeout of the OSD menu.
There are three options for the automatic timeout: 20, 40 and 60 seconds.

**MISC MENU**

There is one item: reset.

RESET: Press "Reset" to return the monitor to its factory default settings.

# How to use AUTO CONFIG Adjustment

This function can tune the parameters of **PHASE**、**CLOCK**、**H-POSITION** and **V-POSITION.**

**Suggesting Adjustment Steps：**

Step 1: Enter the "Windows" Shut-down frame. ( Note：The **Wallpape**r color CAN NOT be black.)

Step 2: Enter OSD Main Menu and choose the "AUTO CONFIG" item, then press SELECT key. The Picture will auto-adjust by itself. After 4 seconds, you can exit OSD and Shut-down frame.

Step 3: If you are not still satisfied with the picture quality, you could choose **CONTRAST** item in OSD Main Menu and adjust it.

**Note:**

1. If you don't like the effect of AUTO CONFIG adjustment, you can adjust PHASE, CLOCK… items in OSD.

2. AUTO CONFIG adjustment can be used in "Windows" except black background frame, but the best effect is in the **SHUT DOWN** frame.

3. It is recommend running "EDIT" program first, then doing AUTO CONFIG adjustment in DOS mode.

## 3-3 Hot Key for Function Controls

| Buttons: | Functions: |
|---|---|
| [Manual] | Main menu |
| [Enter] | Select / Exit |
| [+] | To immediately activate Brightness menu. |
| [-] | Auto config |
| [+] + [PW] + Main Power On | All Reload |
| No signal + [Enter] + Main Power on | Burning mode |
| Signal + [PW] +[ Enter] + Main Power on | Factory Mode |
| Remark : All the short cuts function are only available while OSD off | |

# 4. Circuit Description

## 1. WORKING THEOREM

### A. Scaler

The RTD2023 is total solution graphics processing IC for LCD monitors with panel resolutions up to SXGA. It is configured with integrated 8-bit triple-ADC/PLL, a high quality display processing engine, and an integrated output display interface that can support Dual / Single LVDS panel interface format. To further reduce system costs, the RTD2023 also integrates intelligent power management control capability for green-mode requirements and spread-spectrum support for EMI management. The RTD2023 incorporates the world's first coherent oversampled RGB graphics ADC in a monitor controller system1. The oversampling ADC samples the input RGB signals at a frequency that is much higher than the signal source pixel rate. This can preserve details in the video signal that ordinarily would be lost due to input signal jitter or bandwidth limitations in non-oversampled systems.

### B. MCU:

The MTV512M micro-controller is an 8051 CPU core embedded device especially tailored for flat panel display application. It includes an 8051 CPU core, a 768K-byte SRAM, 4 channels of 6-bit ADC,3 external counters / timers ,6 channels of PWM DAC,VESA DDC interface, and a 64k-byte internal program Flash-ROM memory. of 6-bit ADC, and a built-in , It also includes two IIC Slave B ports, supporting VESA DDC/CI for D-sub interfaces, and a Boot-Code-Free ISP (In System Programming).

#### 1. Features

**General**

- Embedded dual DDC support DDC1, DDC2B, DDC/CI
- Zoom scaling up and down
- Embedded Pattern Generator
- No external memory required.
- Require only one crystal to generate all timing
- Embedded reset control output
- Embedded crystal output to MICROP
- 3 channels 8 bits PWM output, and selectable PWM clock frequency.

**Analog RGB Input Interface**

- Integrated 8-bit triple-channel 140MHz ADC/PLL
- Support up to 140MHz (SXGA@ 75Hz)
- Embedded programmable Schmitt trigger of HSYNC
- Support Sync On Green (SOG) and de-composite sync modes
- On-chip high-performance PLLs
- 32 phase APLL

**Digital Input Interface**

- Support 8-bit video (ITU 656) format input
- Built-in YUV to RGB color space converter & de-interlace

**Auto Detection /Auto Calibration**

- Input format detection
- Compatibility with standard VESA mode and support user-defined mode
- Smart engine for Phase and Image position calibration

**Scaling**

- Fully programmable zoom ratios
- Independent horizontal/vertical scaling
- Advanced zoom algorithm provides high image quality
- Sharpness/Smooth filter enhancement

**Color Processor**

- Digital brightness and contrast adjustments
- sRGB compliance
- Gamma correction
- Dithering logic for 18-bit panel color depth enhancement

**Output Interface**

- Built-in display timing generator and fully programmable
- (RTD2023) 1 and 2-pixel/clock panel support and up to 140MHz
- (RTD2013) 1 and 2-pixel/clock panel support and up to 95MHz
- Scaler internal LSB/MSB swap, odd/even swap and red/blue group swap.
- Programmable TCON function support
- RSDS (Reduced Swing Differential Signaling) data bus type 1~3.
- Dual/Single LVDS interface output
- Reduced EMI and power saving feature
- Integrated Spread-Spectrum DCLK PLL.

**Host Interface**

- Support MCU serial bus interface
- Support MCU parallel bus interface

**Embedded OSD**

- Embedded 11.25K SRAM dynamically stores OSD command and fonts
- Support multi-color RAM font, 1, 2 and 4-bit per pixel
- 16 color palette with 24bit true color selection
- Maximum 8 window with alpha-blending/ gradient/dynamic fade-in/fade-out, bordering/ shadow/3D window type
- Every window can place anywhere on the screen
- Rotary 90,180,270 degree
- Independent row shadowing/bordering
- Programmable blinking effects for each character
- OSD-made internal pattern generator for factory mode
- Support 12x18~4x18 proportional font

**Power & Technology**

- 2.5V/3.3V power supplier
- 0.25um CMOS process; 128-pin QFP package.

## 2. Pin-Out Diagram

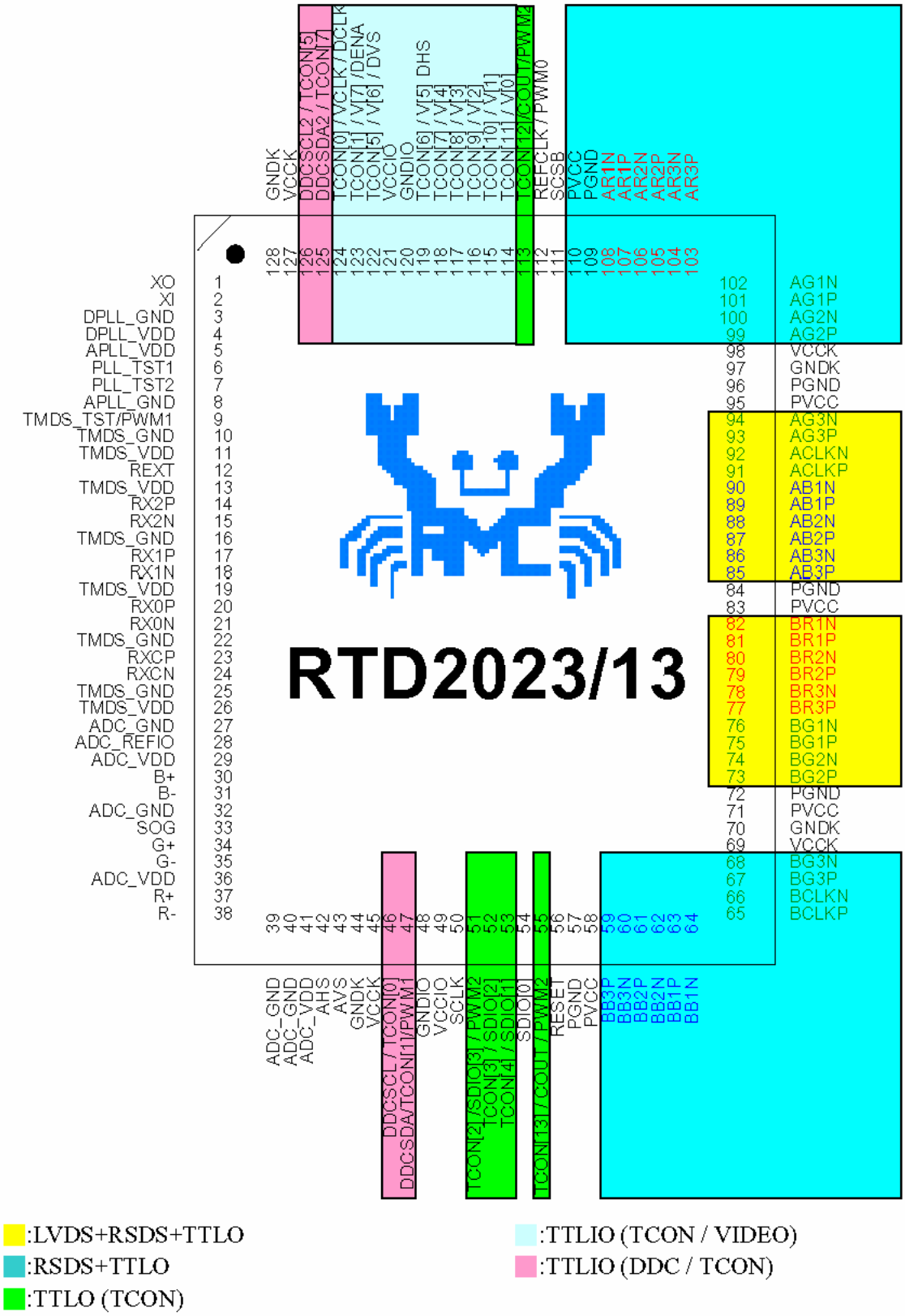


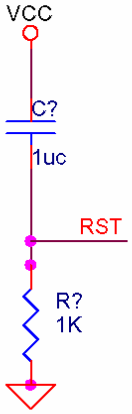

**Figure 1 Pin-Out Diagram ( 6-bit Dual RSDS )**

## B. MCU:

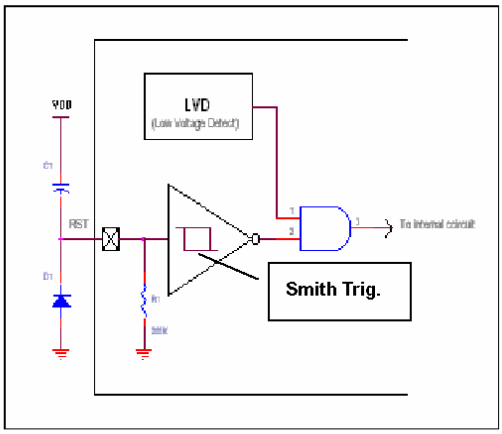
### Hardware Design Attention :

### (1). Reset Time :

Because of the different flash process, so that MTV512M64 has different reset times. In general, we suggest the reset time have to greater than 1ms. The schematic like as below:

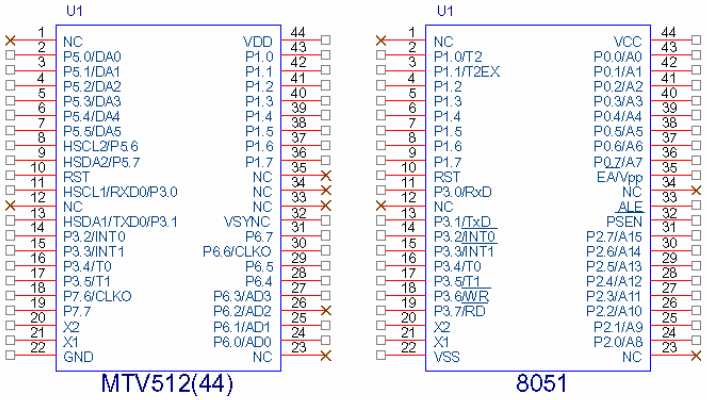



Reset suggest schematic




Reset Circuit of MTV512M

### (2). Pin assignment of MTV512M and 8051




**4.1 MTV512M Port 1**

(1) Port 1 is either "8051 standard I/O" or "CMOS output" pin type

**4.2 MTV512M Port 3**

(1) MTV512M use P7.6, P7.7 to replace 8051 P3.6, P3.7

(2) Avoid to byte access Port 3 or bit access P3.6, P3.7

(3) P7.6 is multi-function and "CMOS" pin type, it is either general purpose I/O or clock output

(4) P7.7 is a general purpose I/O of "CMOS" type

**4.3 MTV512M Port 5**

(1) Port 5 is multi-function and "Open Drain" pin type, each of Port 5 needs an external pull up resistor

(2) P5.0~P5.5 are either general purpose I/O or PWM DAC output

(3) P5.6~P5.7 are either general purpose I/O or Slave IIC bus

(4) These I/O are bit access application instead of byte access.

Output -> Port5.0 = 0x01;

Input -> X = (Port5.0 & 0x01); X is variable in Keil C

**4.4 MTV512M Port 6**

(1) Port 6 is multi-function and "CMOS" pin type

(2) P6.0~P6.3 are either general purpose I/O or ADC channel input

(3) P6.4, P6.5, P6.7 are general purpose I/O

(4) P6.6 is either general purpose I/O or clock output

(5) These I/O are bit access application instead of byte access.

Output -> Port5.0 = 0x01;

Input -> X = (Port5.0 & 0x01); X is variable in Keil C

**4.5 Two Clock Output**

(1) MTV512M has 2 Clock Output to provide clock-in for other device, such as scaler IC.

**4.6 P3.3 as external INT1 interrupt trigger**

(1) Set IE (8051 SFR) to 0x84 (enable EA and EX1)

(2) Set EINT1PEN (XFR located at 0x0f8e) to 0x80

**4.7 Etimer generates INT1 interrupt, not Timer2 interrupt**

(1) Set IE (8051 SFR) to 0x84(enable EA and EX1)

(2) Set EINT1PEN (XFR located at 0x0f8e) to 0x40

(3) The Etimer is a 16-bit Timer/Counter which provide capture/reload functions like timer2 in 8052, but it can't use to be a baud rate generator

(4) Note that use the Timer2 , please clear the TF and EX2 bits when interrupt is happened.

(5) Note MTV512M64 Timer2 don't provide the baudrate generate like standard 8051.

**4.8 Bit Rev0, Rev1 of DDCCTRAx**

(1) No matter EDID data transfer in DDC1 or DDC2 mode, the bit Rev0, Rev1 of DDCCTRA1/ DDCCTRA2 should set to normal operation, detail see 3.1

## (3). Special application

**A Dual DDCRAM (128-byte * 2) replace 2 pieces of EEPROM**

The DDC1/2 Host can access DDCRAM1 and DDCRAM2 as if 24C0x EEPROM is connected onto the interface, **Figure A-1** shows 2 pieces of EEPROM are connected onto the IIC bus for PC Host read the EDID data; **Figure A-2** shows MTV512M dual DDCRAM replace 2 pieces of EEPROM

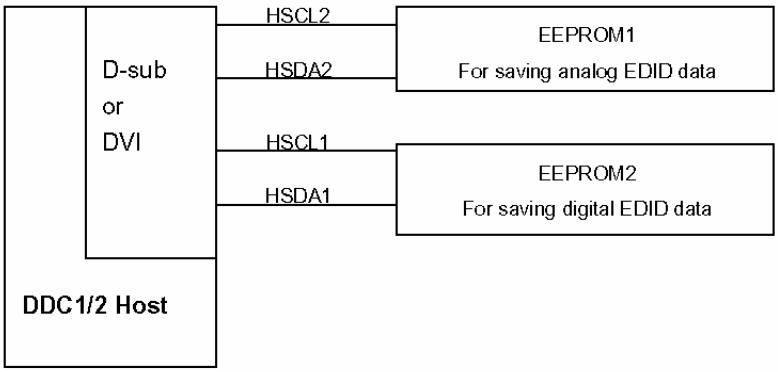



**Figure A-1**

Rev0: Must be set "0"(Normal Option)
Rev1: Must be set "1"(Normal Option)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **DDCCTRA1** | F06h (w) | DDC1en | En128W | Rev0 | Rev1 | | | SlvA1bs1 | SlvA1bs0 |
| **SLVA1ADR** | F07h (w) | ENSlvA1 | Slave A1 IIC address | | | | | | |
| **DDCCTRA2** | F86h (w) | DDC1en | En128W | Rev0 | Rev1 | | | SlvA2bs1 | SlvA2bs0 |
| **SLVA2ADR** | F87h (w) | ENSlvA2 | Slave A2 IIC address | | | | | | |

```
PADMOD2 = 0xa0;                 //Enable HSDA1/HSCL1、HSDA2/HSCL2
DDCCTRA1 = 0xd0;                //Enable DDC1 mode + Could write/read 128byte
SLVA1ADR = 0x80 | (0xa0 >> 1);  //Set SlaveA1 address
DDCCTRA1 = 0xd0;                //Enable DDC1 mode + Could write/read 128byte
SLVA1ADR = 0x80 | (0xa0 >> 1);  //Set SlaveA2 address
```

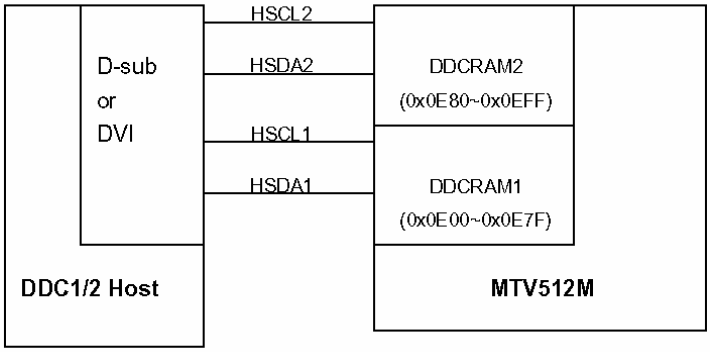



Figure A-2

**B.Clock output to next device IC**

**Figure A-1** shows that MCU and scaler IC need different frequency of oscillator. **Figure A-2** shows that MTV512M and scaler IC just need one oscillator, and the selected oscillator is appropriate for scaler IC

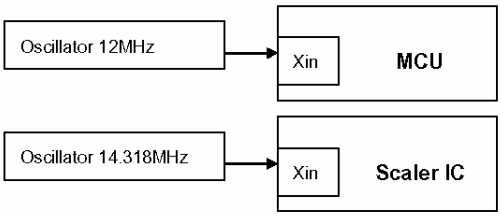



Figure A-1

The range of crystal frequency is 12MHz ~ 24MHz while MTV512M works in single clock mode; If the supplied oscillator is larger than 15MHz, do not enable CPU running at double clock rate

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **PADMOD2** | F52h (w) | HIIC1E | | HIIC2E | CKO1 | | | | |
| **OPTION** | F56h (w) | PWMF | DIV253 | FclkE | DCLK | ENSCL | | | IP77E |
| **PADMODE** | F5Eh (w) | | CKO2 | | | | | | |

```
PADMOD2 = 0xb0;     //Enable HSDA1/HSCL1, HSDA2/HSCL2, Clock1 output
PADMOD2 = 0x00;     //set/clear DCLK, double/single Clock1, 2 output
PADMODE = 0x40;     //Enable Clock2 output
```

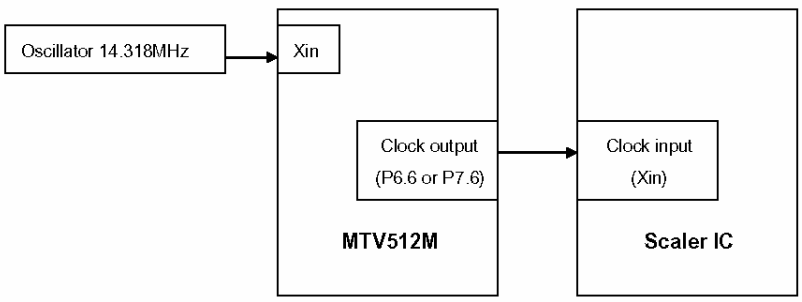
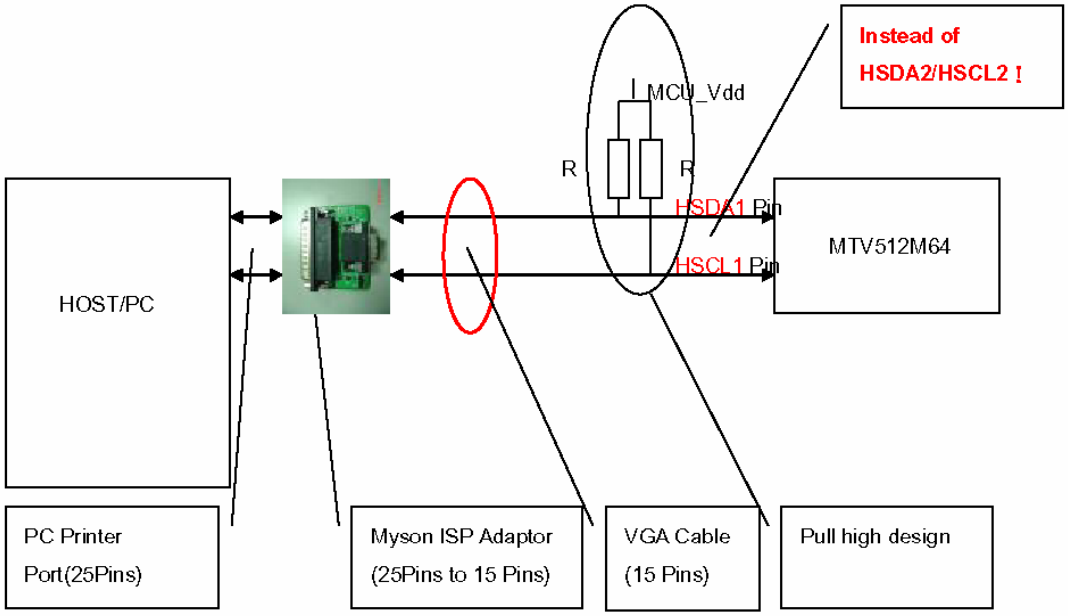



Figure A-2

## C.VESA DDC/Ci and ISP(In System Programming)

Slave IIC port is an important feature to perform the request of VESA DDC/Ci and ISP.




(3)MTV512M64 receive data form HOST/PC or transfer to HOST/PC.

The sample code:

Main.c

```
unsigned char DATA_BUFFER;        //Global Variable to save data form HOST/PC
Void main(void)
{
 PADMOD2 = 0x80;                  //Enable HSDA1/HSCL1(I2C Bus)
 IIC_INTEN = 0x60;                //Enalbe SlaveB match interrupt and RCBI
 INTFLG = 0x00;                   //Clear interrupt flag
 SLVBADR = 0x80 | (0x4c>>1);      //Define slaveB address(0x4c)
 IE = 0x84;                       //Enable 8051 INT1
 While(1)
    {
       if( DATA_BUFFER == 0x77 )
             TXRCBBUF = 0xaa;                          //response the command to HOST/PC
      }
    }

    void int1 (void) interrupt 2
    {
     //Slave B Match Address = 0x4c
     if((INTFLG & 0x20 ) != 0 )
           INTFLG = INTFLG & 0x08;                     //Clear interrupt flag
     if(( INTFLG & 0x40 ) != 0 )                       // Receieved data
      {
       if(( IIC_STUS1 & 0x80 ) !=0 )   //revceive word address
            DATA_BUFFER = TXRCBBUF;
       else
            DATA_BUFFER = TXRCBBUF;
    }
}
```

Receive the information form HOST/PC

# 5. Adjusting Procedure

## 5-1. Function Test

### 5-1.1 Product

19” LCD Monitor

### 5-1.2 Test Equipment

Color Video Signal & Pattern (or PC with SXGA resolution)

### 5-1.3 Test Condition

Before function test and alignment, each LCD Monitor should be run-in and warmed up for at least 30 minutes with the following conditions:

(a) In room temperature,
(b) With full-white screen, RGB, and Black
(c) With cycled display modes,
640*480 (H=43.27 kHz, V=85Hz)
800*600 (H=53.7 kHz, V=85Hz)
1024*768 (H=68.67 kHz, V=85Hz)
1280*1024(H=80.0KHz, V=75Hz)

### 5-1.4 Test Display Modes & Pattern

#### 5-1.4.1 Compatible Modes

| Item | Analog Timing |
|---|---|
| 1 | 640 x 350 @ 70Hz, 31.5kHz |
| 2 | 640 x 400 @ 70Hz, 31.5kHz |
| 3 | 640 x 480 @ 60Hz, 31.5kHz |
| 4 | 640 x 480 @ 67Hz, 35.0kHz |
| 5 | 640 x 480 @ 72Hz, 37.9kHz |
| 6 | 640 x 480 @ 75Hz, 37.5kHz |
| 7 | 720 x 400 @ 70Hz, 31.5kHz |
| 8 | 800 x 600 @ 56Hz, 35.1kHz |
| 9 | 800 x 600 @ 60Hz, 37.9kHz |
| 10 | 800 x 600 @ 75Hz, 46.9kHz |
| 11 | 800 x 600 @ 72Hz, 48.1kHz |
| 12 | 832 x 624 @ 75Hz, 49.7kHz |
| 13 | 1024 x 768 @ 60Hz, 48.4kHz |
| 14 | 1024 x 768 @ 70Hz, 56.5kHz |
| 15 | 1024 x 768 @ 72Hz, 58.1kHz |
| 16 | 1024 x 768 @ 75Hz, 60.0kHz |
| 17 | 1280 x 1024 @ 60Hz, 63.4kHz |
| 18 | 1280 x 1024 @ 75Hz, 79.97kHz |
| 20 | 1280x 720 @ 60Hz, 45kHz (HDTV) |

### 5-1.5.2 Auto Image Adjust

Please select and enter *"**Auto Adjust**"* function on Main Menu to see if it is workable. The *"**Auto Adjust**"* function is aimed to offer a better screen quality by built-in ASIC. For optimum screen quality, the user has to adjust each function manually.

### 5-1.5.3 Firmware

Test Pattern: Burn in Mode (Refer to Chapter III-3. Hot Keys for Function Controls) - Make sure the F/W is the latest version.

### 5-1.5.4 DDC

Test Pattern: EDID program - Make sure it can pass test program.

### 5-1.5.5 Fine Tune and Sharpness

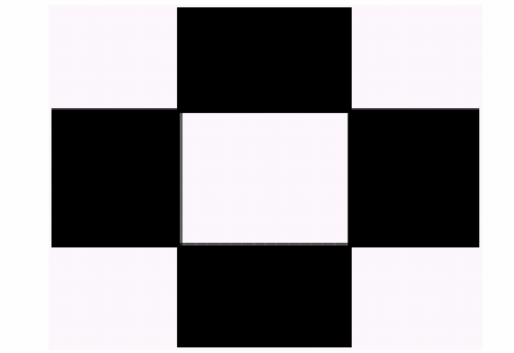
Test Signal: 1280 x 1024 @ 60.0kHz
Test Pattern: Line Moiré Pattern
- Check and see if the image has noise and focus performs well. Eliminate visual line bar.
- If not, readjust by the following steps:
(a) Select and enter "**Auto config**" function on "**Auto Adjust**" to adjust the image to eliminate visual wavy noise.
(b) Then, select and enter "**Sharpness**" function to adjust the clarity and focus of the screen image.

### 5-1.5.6 White Balance

Test Signal: 640*480@60Hz
Test Pattern: Full White and Black Pattern

### 5-1.5.7 R, G, B, Colors Contrast

Test Signal: 1280 x 1024 @ 60.0kHz
Test Pattern: R, G, B, Color Intensities Pattern and 16 Gray Scale Pattern
- Check and see if each color is normal and distinguishable.
- If not, please return the unit to repair area.



### 5-1.5.8 Screen Uniformity and Flicker

Test Signal: 1280 x 1024 @ 60.0kHz
Test Pattern: Full White Pattern
- Check and see if it is in normal condition.

### 5-1.5.9 Dead Pixel and Line

Test Signal: 1280 x 1024 @ 60.0kHz
Test Pattern: Dark and White Screen Pattern
- Check and see if there are dead pixels on LCD panel with shadow gauge and filter film.
- The total numbers and distance of dead pixels should be compliant with the spec.

### 5-1.5.10 Mura

Test Pattern: White, RGB, Black, & Grey
Test Tool: 10 % ND Filter
- Check if the Mura can pass 10 % ND Filter.

### 5-1.5.11 Check for Secondary Display Modes

Test Signal:
Analog: 640*350@70Hz; 640*400@60Hz;640*480@50/60/67/72/75/85Hz;
720*400@70Hz, 800*600@56/60/72/75/85Hz;
832*624@75Hz, 1024*768@50/60/70/72/75/85Hz;
1280*1024@60/75Hz
- Normally when the primary mode 1280*1024@60Hz is well adjusted and compliant with the specification, the secondary display modes will be great possible to be compliant with the spec. But we still have to check with the general test pattern to make sure every secondary is compliant with the specification.

### 5-1.5.12 All Modes Reset

After final QC step, we have to erase all saved changes again and restore the factory defaults. You should do “All Mode Reset” again.

### 5-1.5.13 Power off Monitor

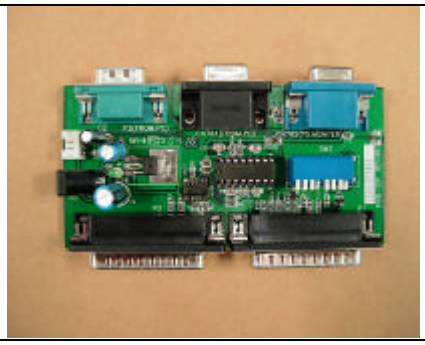
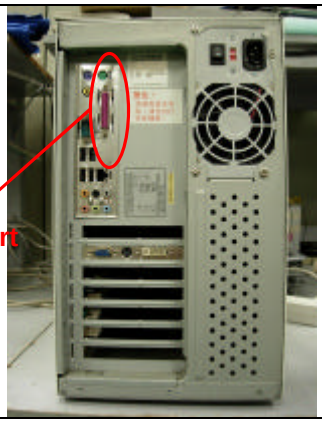
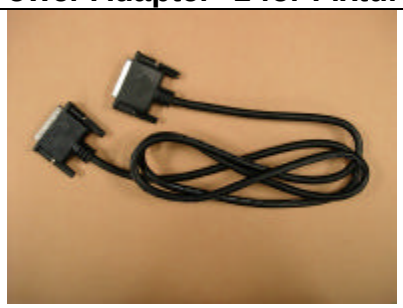
Turn off the monitor by pressing “Power” button.

# 5-2. Firmware Upgrade Procedure

## 5-2.1 Equipment Needed

- Q9 Monitor
- Fixture for Firmware Upgrade
- Power Adapter *1 for Fixture (+12V)
- VGA Cable *1
- PC (Personal Computer)
- LPT Cable *1
- Firmware Upgrade Program
- One additional monitor for checking the program execution PC

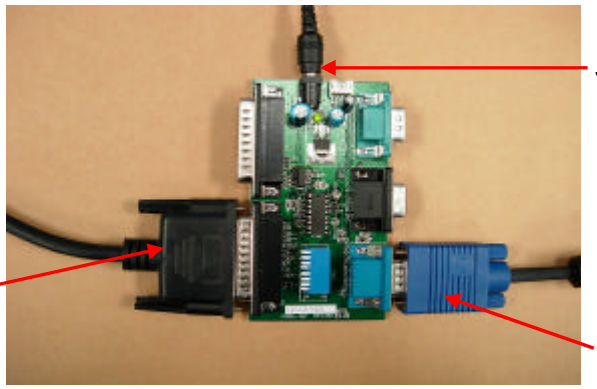
Fixture
Printer Port
Q9

| | | |
|---|---|---|
|  |  |  |
| **Q9** | **Fixture** | **Power Adapter *1 for Fixture** |
|  |  |  |
| **VGA cable** | **PC** | **LPT cable** |

### 5-2.2 ISP procedure

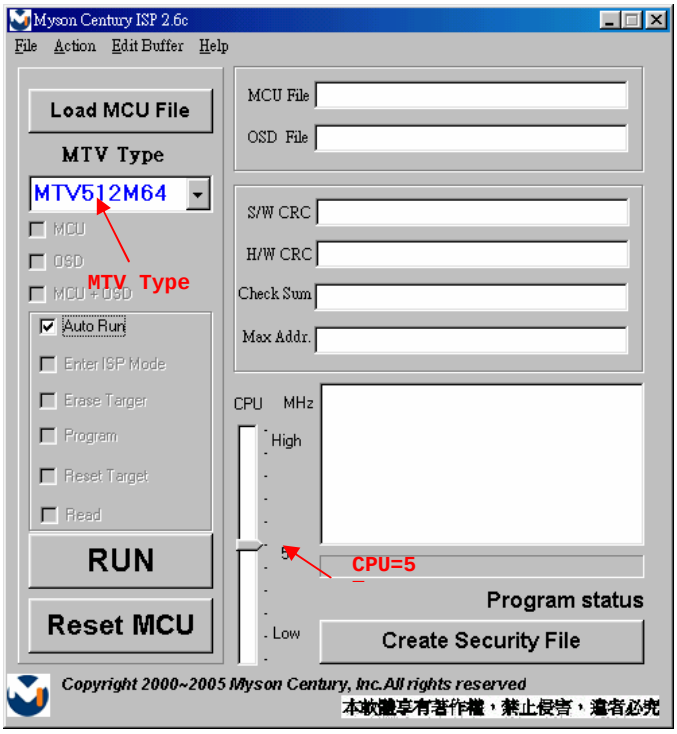
**Connection of ＩＳＰ Kit：**

Using LPT cable connect PC Print port
Using VGA cable connect monitor (destination)
Plug Power Adapter to Fixture
Fixture SW3 select 4 & 8 both

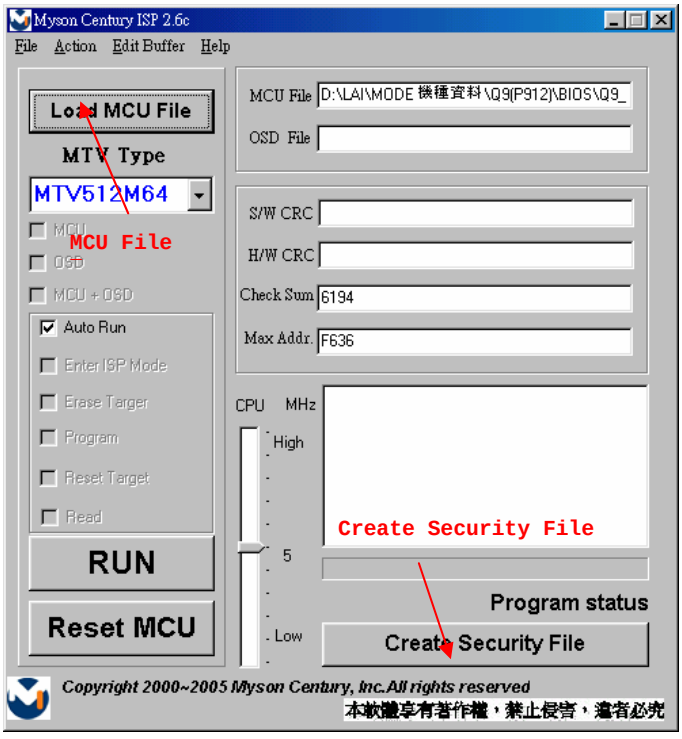


**Setting of ISP program on PC**

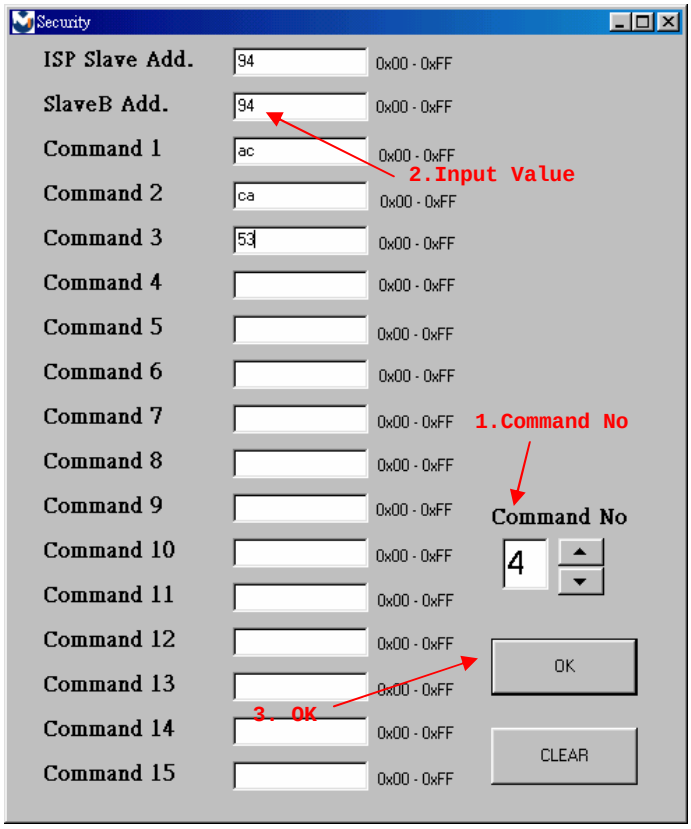
1. Setup MYSON ISP program,
2. Execute ISP program to get the window below
3. Select “MTV512M64” MTV type,
4. Select CPU=5 MHz



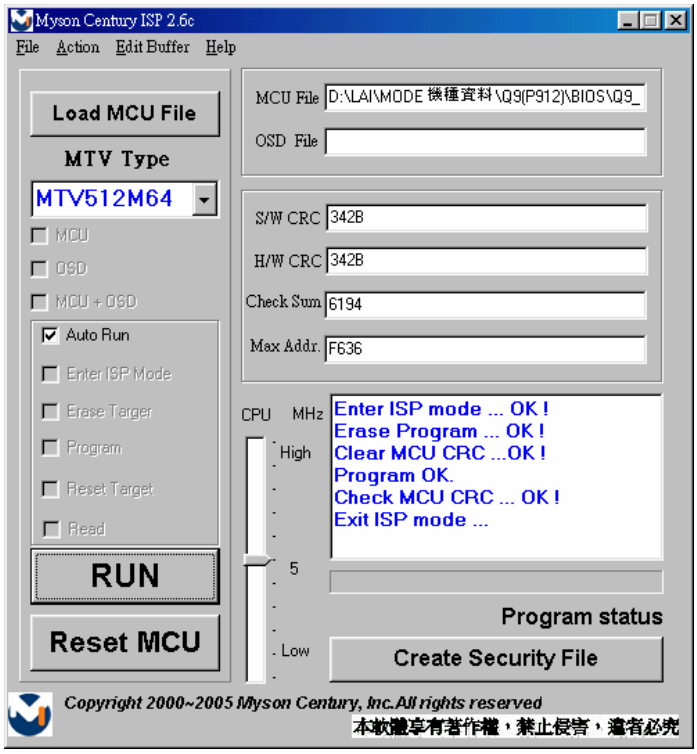

5. Click “Load MCU file” and then find the updated firmware code.
6. Click “Create Security File” going to next window



7. Select Command No=4
8. Put ISP Slave Add=94 ; Slave B Add=94 ; Command 1=ac ; Command 2=ca , Command 3=53
9. Click “OK” to start ISP function and update the firmware into Monitor.




10. Firmware update is finished when the display backed to the window then press “RUN” as below.



## 5.3 . EDID Procedure

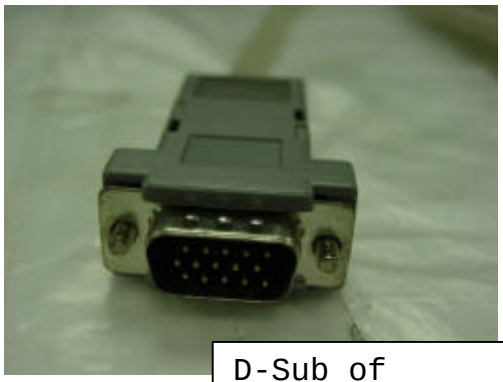
# DDC User's manual

**1. Hardware installation**

A. The EDID cable has equipped 2 different terminals;
   one is male 25 pin printer connector and another side is male 15 pin D-sub connecter.
B. Connect the EDID cable from PC Printer port to monitor D-sub connector.
C. Make sure the monitor was working under power saving mode and keep it at "Power Saving state" during DDC process.

EDID-Kit Cable

PC printer port 25pin connector



D-Sub of Monitor 15pin VGA

## 2. Programming procedure

A. Normally, you received a EDID zip file of new model. You need to unzipped it.

B. There will need the following files for DDC program: (Q9 is an example)

1. DPS.EXE
2. Q9.BAT
3. Q9.DDC
4. Q9.CFG
5. Q9.DPS

C. Execute the **Q9.BAT** (for Q9 monitor only) from Programming PC. Below screen will display.

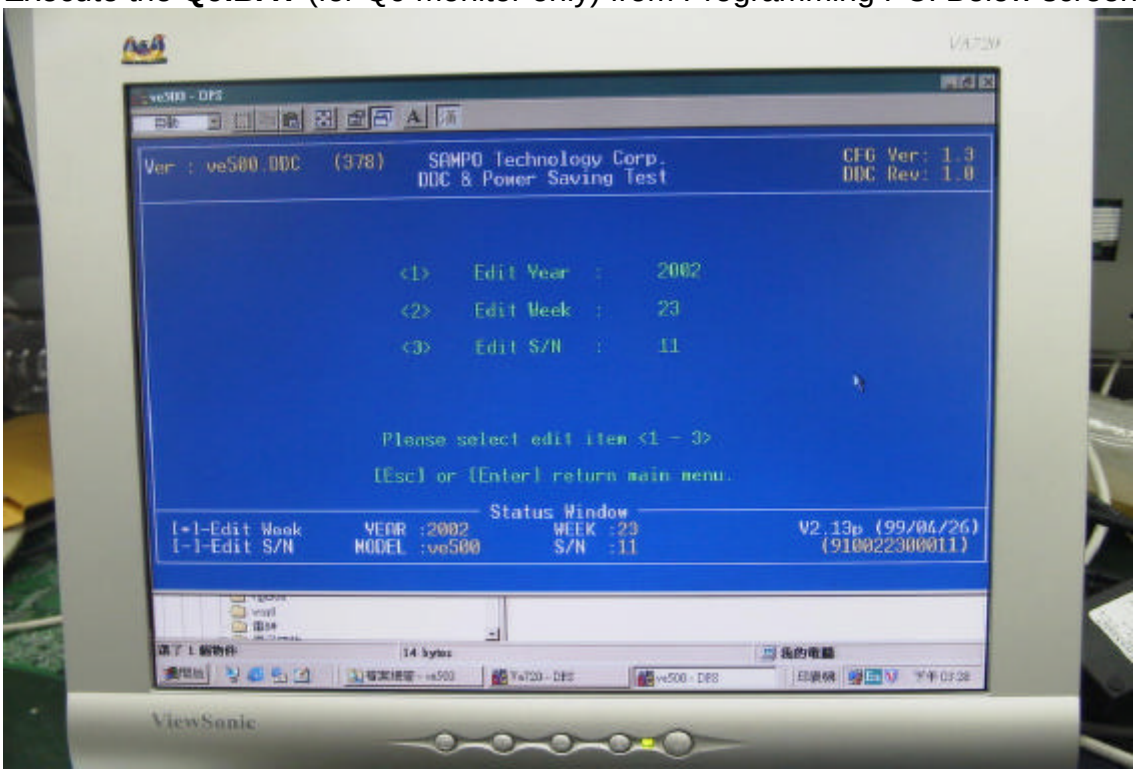



Fig-DDC1

Refer to Fig-DDC1; you have to select the required item if the display data was not you want.

**Press 1:** For year, the cursor will move to the column behind “Edit Year” than you can key in the data you want after that press enter to exit and return. (It needs 4 numbers for this data)

**Press 2:** For week, the cursor will move to the column behind “Edit Week” than you can key in the data you want after that press enter to exit and return. (This data is within 1 ~ 53.)

**Press 3:** For S/N,, the cursor will move to the column behind “Edit S/N” than you can key in the data you want after that press enter to exit and return. (This data is within 0 ~ 99999, 5 numbers max.)

D. **Press “ESC” or “Enter” key** to return main menu, the Fig-DDC2 will be displayed and the correct serial number will show on right corner of screen.

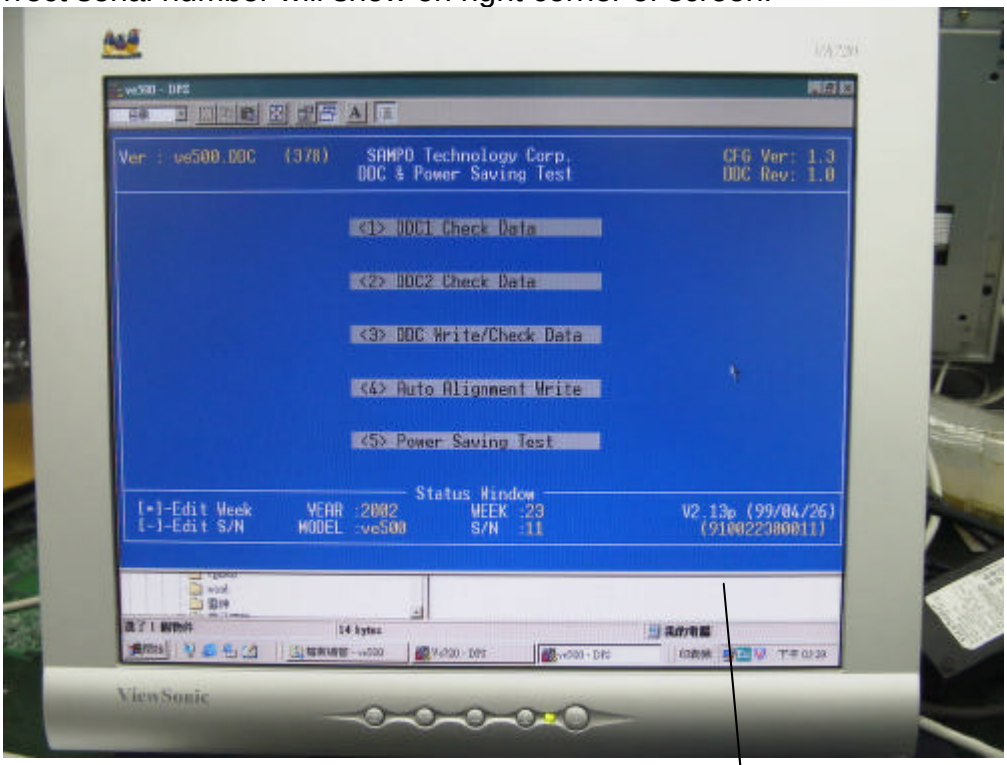



Fig-DDC2

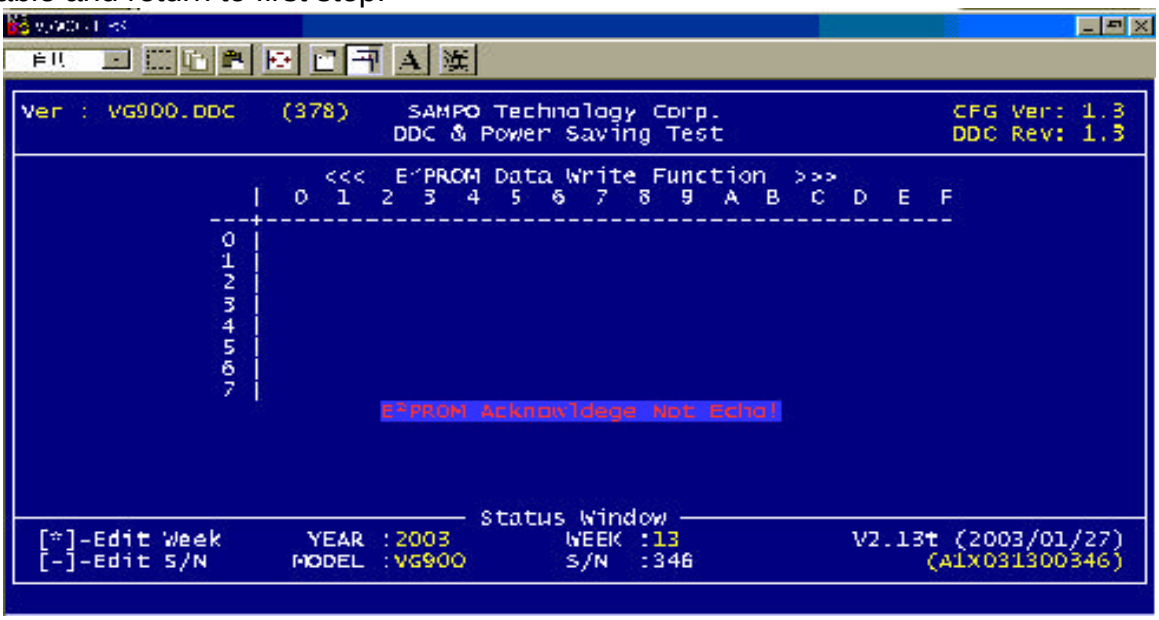
Display updated serial number.

Under Fig-DDC2, you could change the “Week” data by press “*” key and the “S/N” data by press “-“ key.

**Press 3 “DDC Writer/Check Data”:** The Kit will start to program new data of EDID into monitor, all DDC data will display on the screen after programming.
Please refer to Fig-DDC3 below, the DDC process is finished.


**Fig-DDC3**

The message (E2PROM Acknowledge Not Echo) will display on the screen if there is any error detected by Programming PC. If error message is happened, please re-check the connection of cable and return to first step.




Please refer to the Viewsonic EDID data format that was printing on ID label.

**PPPYYWWAxxxx**

**PPP** = Viewsonic Regional Product ID Code, EX. Q9 is “PW1”, Q9b is “PW3”.
**YY**= 2 digits of Manufacturing year. (range 1996-2015).
**WW** = 2 digits of Manufacturing week (range 01-54).
**A** = 0~1 HSD A grade + Realtek
**A** = 2~3 HSD A- grade + Realtek
**A** = 4~5 HSD V grade + Realtek
**A** = 6~9 Reserve
**xxxx** = 4 digits of Sequence number. (range 0001-9999).

## 5.4 Parking Procedure

1.1 Paste protecting film to protect the monitor. (Figure 1)

1.2 Put the montor in the PE bag and seal the bag with tape. (Figure 2)

Figure 1

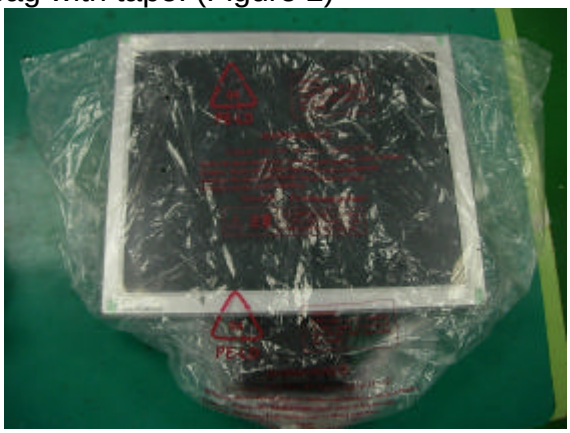


Figure 2

1.3 Put the cushions on the monitor. (Figure 3)

1.4 Place the monitor into the carton and then put all the accessories into the carton. At last, The carton and seal it with tape. (Figure 4)

Figure 3

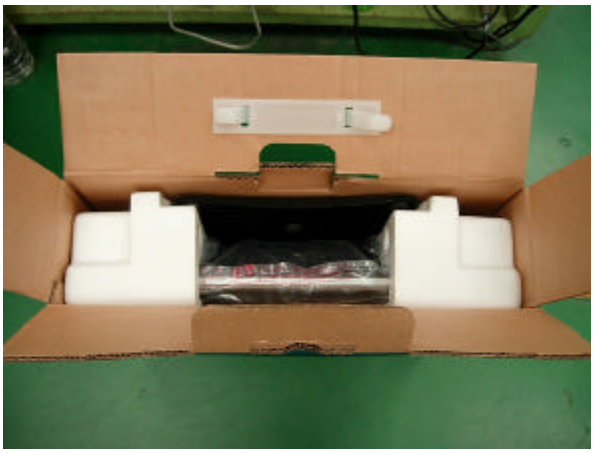


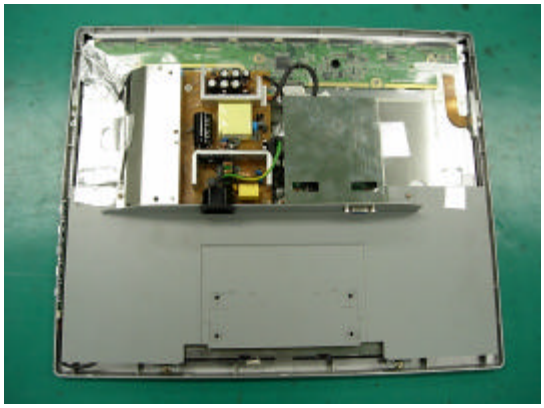
Figure 4

## 2. Disassembly

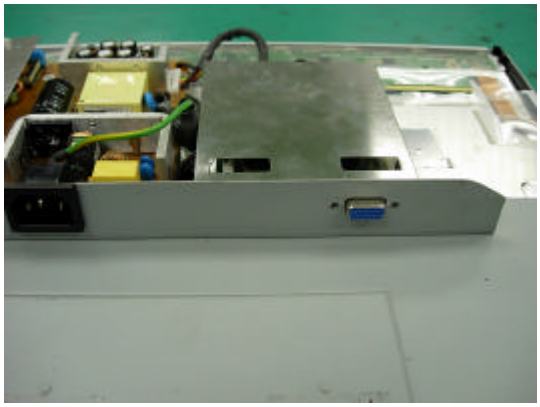
Lie down the monitor on flat table

Remove Stand by 4 screw

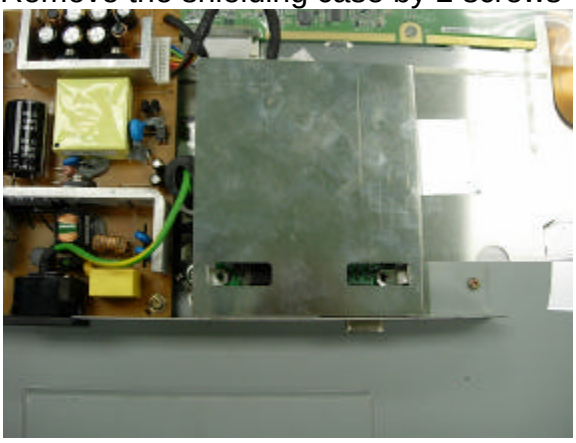
Remove CAB-B

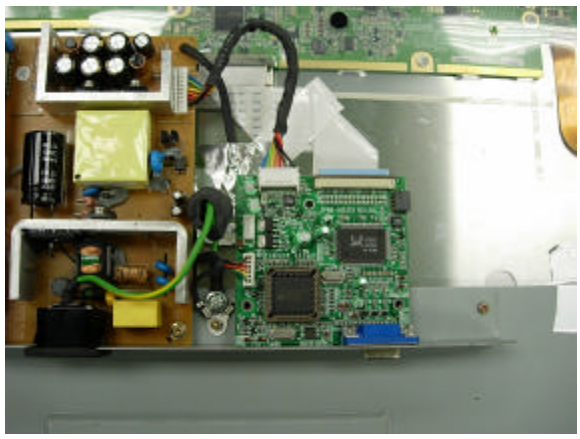


Take off  D-sub 2 screws

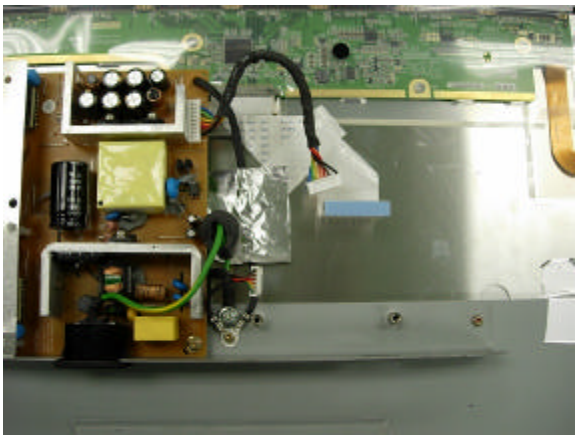


Remove the shielding case by 2 screws

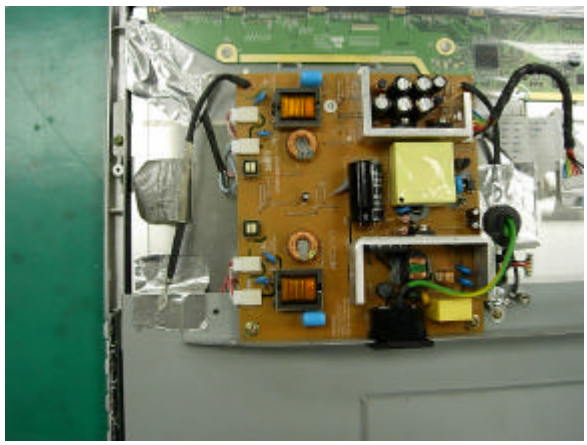




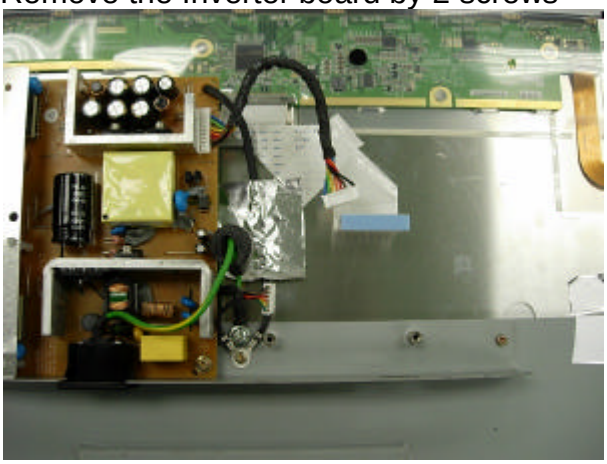
Remove the I/F board

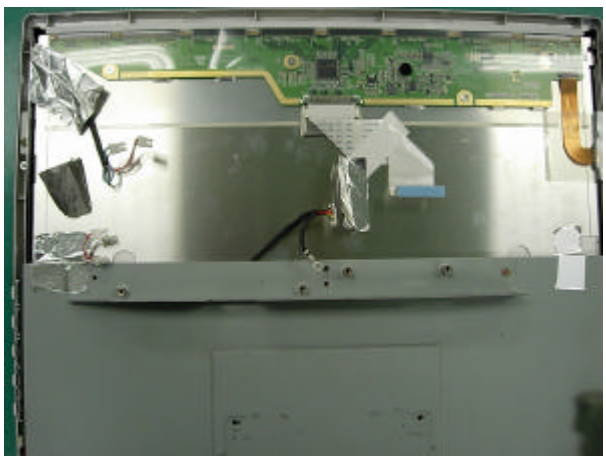


Remove the shielding case by 1 screw

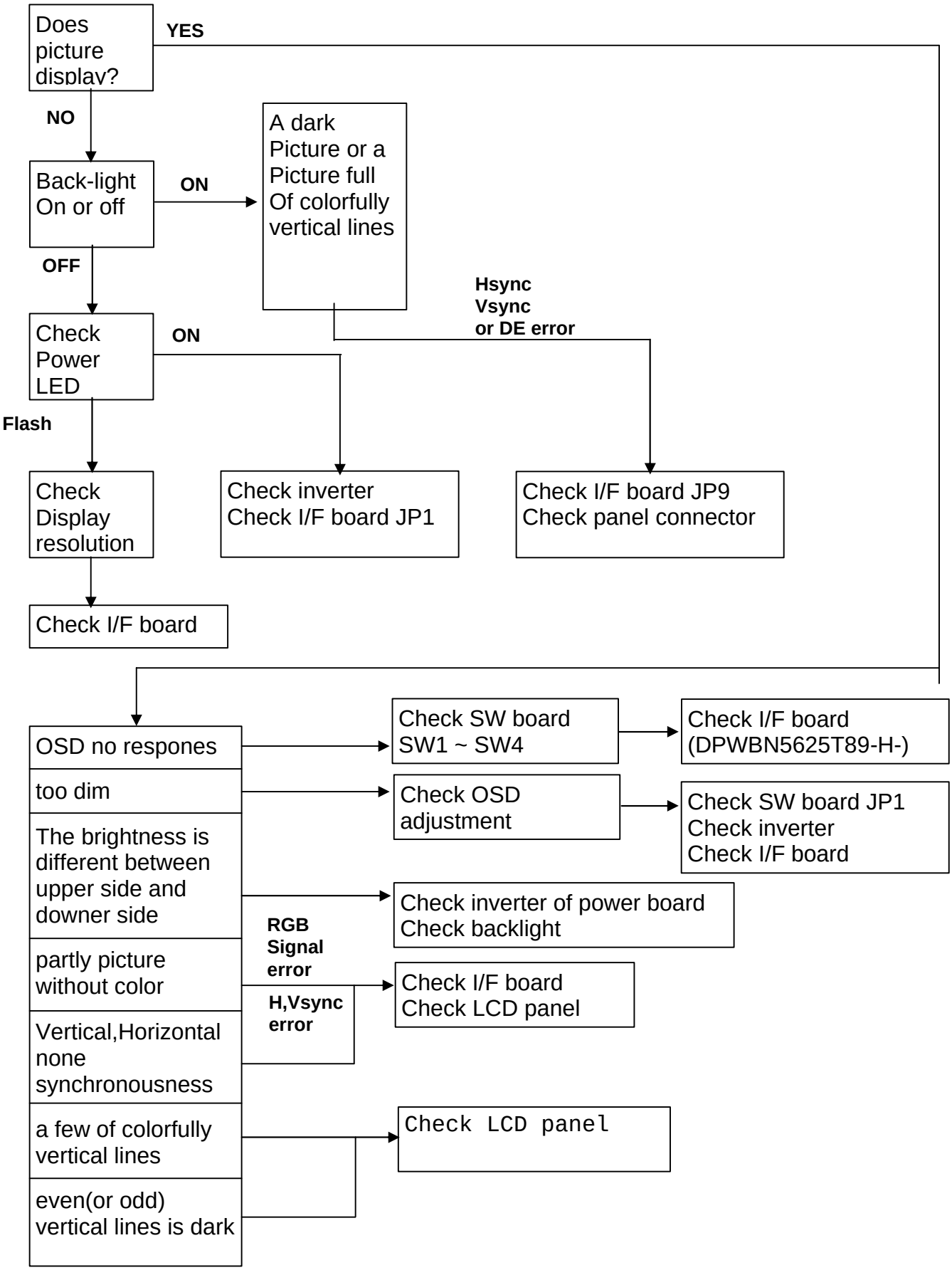


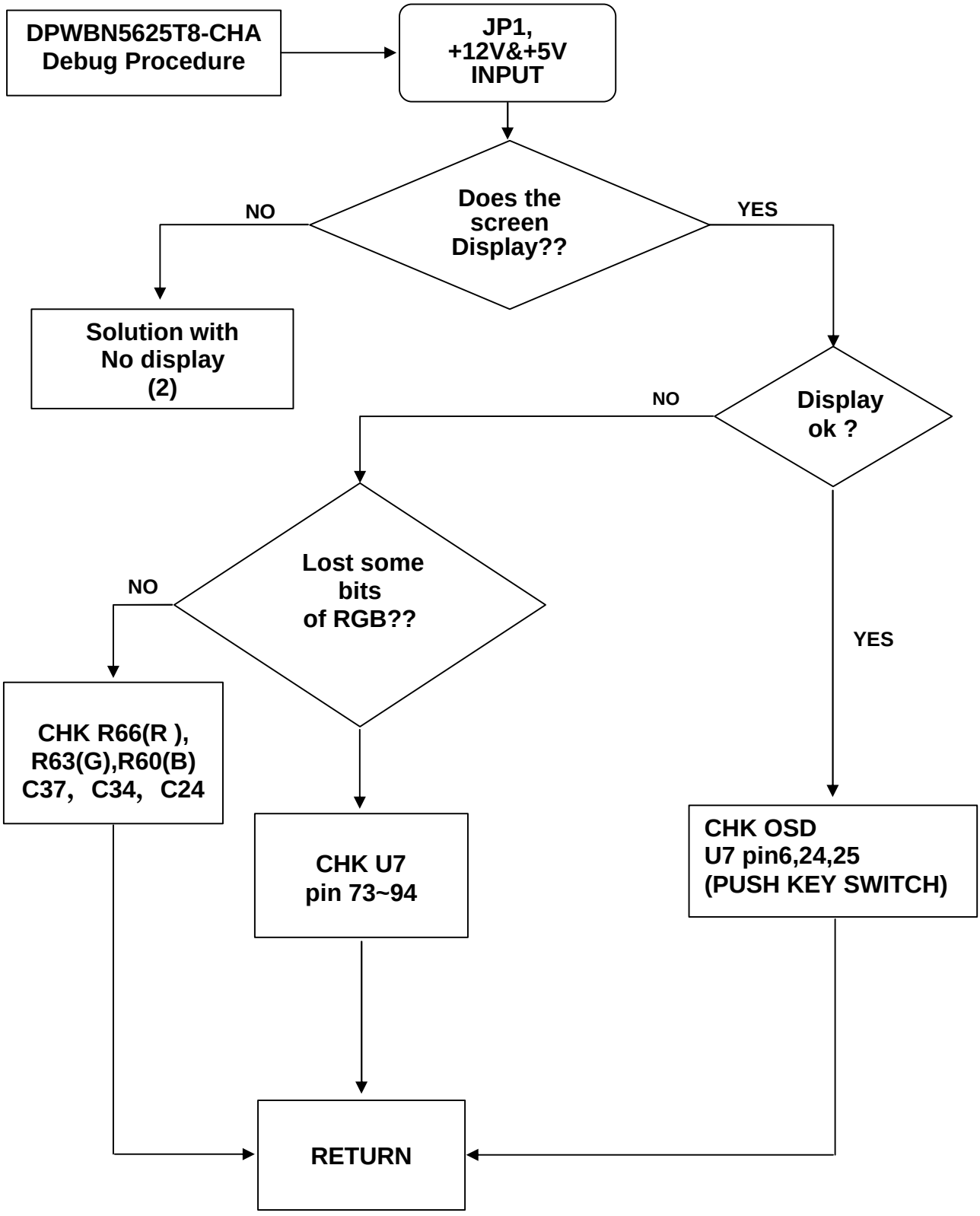
Remove the Inverter board by 2 screws

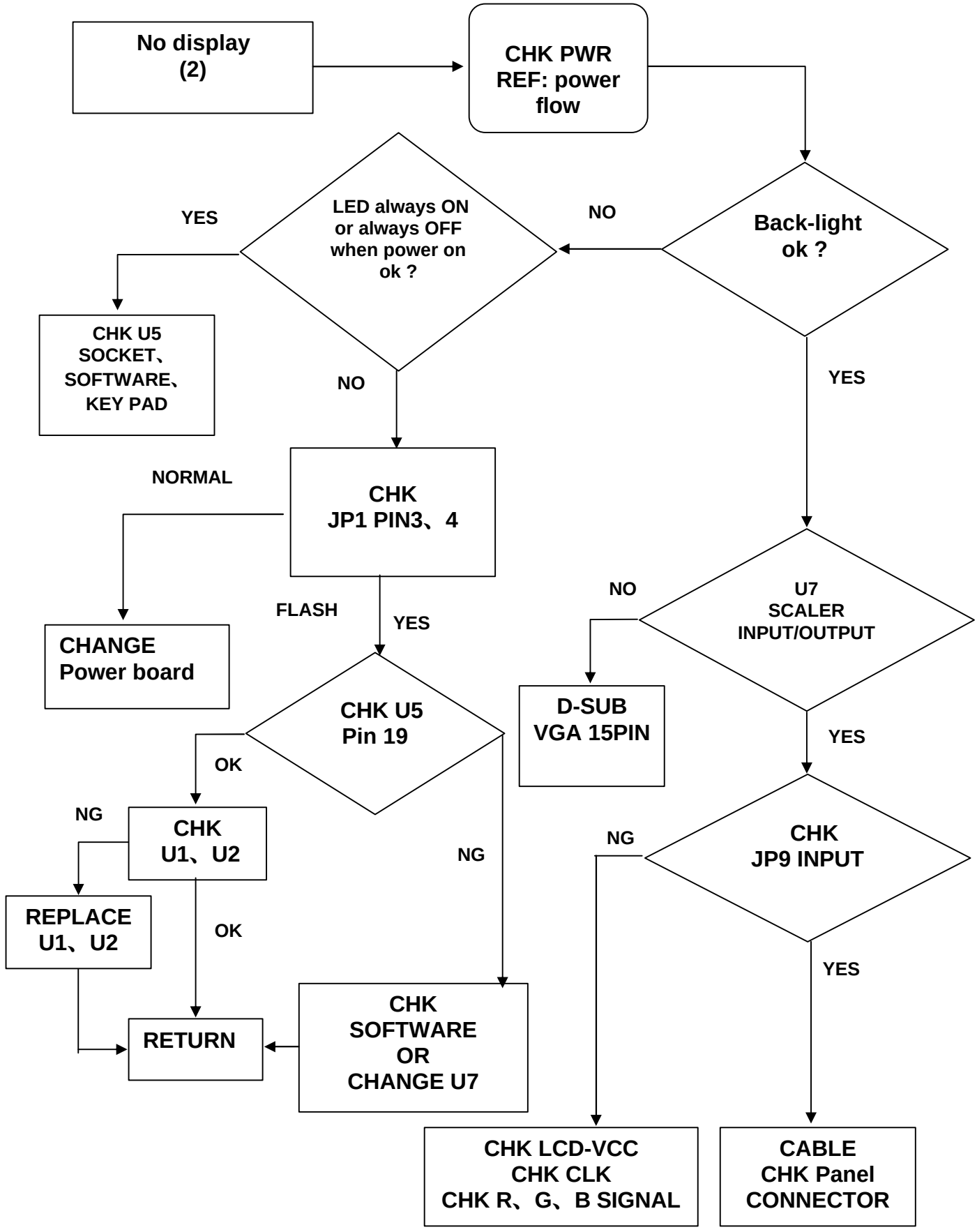




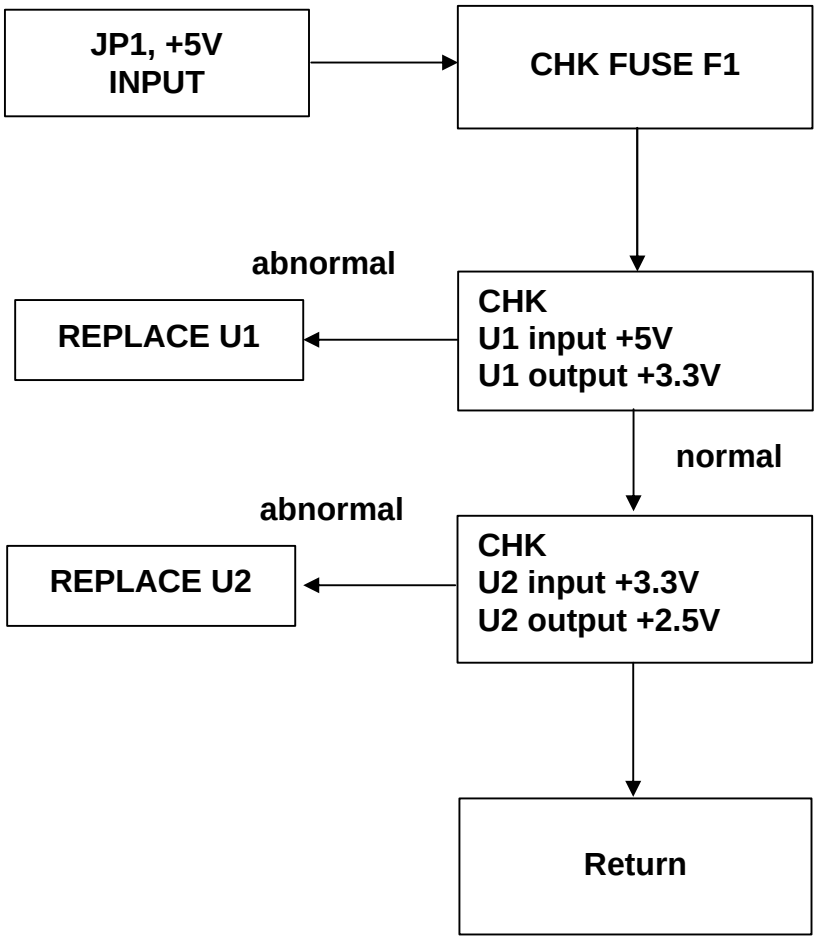
# 6. TROUBLE SHOOTING FLOW CHART




DPWBN5625T8-CHA
Debug Procedure
JP1,
+12V&+5V
INPUT
Does the
screen
Display??
NO
YES
Solution with
No display
(2)
Display
ok ?
NO
YES
Lost some
bits
of RGB??
NO
CHK R66(R ),
R63(G),R60(B)
C37, C34, C24
CHK U7
pin 73~94
CHK OSD
U7 pin6,24,25
(PUSH KEY SWITCH)
RETURN


No display
(2)
CHK PWR
REF: power
flow
Back-light
ok ?
NO
LED always ON
or always OFF
when power on
ok ?
YES
CHK U5
SOCKET、
SOFTWARE、
KEY PAD
NO
YES
NORMAL
CHK
JP1 PIN3、4
CHANGE
Power board
FLASH
YES
NO
U7
SCALER
INPUT/OUTPUT
D-SUB
VGA 15PIN
CHK U5
Pin 19
OK
NG
YES
NG
CHK
U1、U2
CHK
JP9 INPUT
REPLACE
U1、U2
OK
NG
YES
RETURN
CHK
SOFTWARE
OR
CHANGE U7
CHK LCD-VCC
CHK CLK
CHK R、G、B SIGNAL
CABLE
CHK Panel
CONNECTOR

# DPWBN5625T89-H- POWER FLOW



# 7. Recommended Spare Parts List

## RECOMMENDED SPARE PARTS LIST (Q9-1)

**ViewSonic Model Number: VS10863-1W**
**Rev: 1a**
**Serial No Prefix: PW1**

| Item | Description | | ECR/ECN | ViewSonic P/N | Ref. P/N | Location | Universal Number# | Panel Sources |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Hanstarr (12ms) |
| 1 | **Accessories:** | POWER CORD | | A-PC-0106-0180 | QACC-1126D8D--- | POWER CORD | | 1 |
| 2 | **PC Board Assembly:** | AC ADAPTOR & INVERTER | | B-00003900 | RUNTP5642T8---- | ADAPTOR & INV. | | 1 |
| 3 | | I/F BOARD ASS'Y | | B-00003899 | DPWBN5625T89-H- | I/F BOARD ASS'Y | | 1 |
| 4 | | OSD-SW BOARD ASS'Y | | B-00003901 | DPWBN5720T8---- | SW BOARD ASS'Y | | 1 |
| 5 | **Cabinets:** | BASE | | C-00003935 | GSTN-2940T8---- | BASE | | 1 |
| 6 | | CAB-A | | C-00003936 | GCABA2361T8F--E | CAB-A | | 1 |
| 7 | | CAB-B | | C-00003937 | DCABB1877T8F--A | CAB-B | | 1 |
| 8 | | NECK | | C-00003938 | GCOVD2613T8---- | NECK | | 1 |
| 9 | **Cables:** | FFC CABLE (30 PIN) | | CB-00003907 | QCODP1217T8---- | FFC CABLE (30 PIN) | | 1 |
| 10 | | INVERTER EXTEND WIRE | | CB-00003906 | QCNWS0902T8012- | INV. EXTEND WIRE | | 2 |
| 11 | | OSD-SW WIRE | | CB-00003909 | QCNWS0906T8033A | OSD-SW WIRE | | 1 |
| 12 | | POWER BOARD GND WIRE | | CB-00003908 | QTMLW0002-8376- | POWER/B GND WIRE | | 2 |
| 13 | | SIGNAL CABLE | | CB-00002024 | QCODS1584D8D--A | SIGNAL CABLE | | 1 |
| 14 | **Documentation:** | CD Wizard (CD-ROM) | | DC-00003939 | DDSKC0063T8---- | CD Wizard (CD-ROM) | | 1 |
| 15 | | ID LABEL | | DC-00003940 | TLABM4495T8---- | ID LABEL | | 1 |
| 16 | | Quick Start Guide | | DC-00003912 | TINSE3206TG---- | Quick Start Guide | | 1 |
| 17 | **Electronic** | 30 PIN CONNECTOR | | E-00003913 | QCNCP2138T8---- | 30 PIN CONNECTOR | | 1 |
| 18 | **Components:** | D-SUB CONNECTOR | | E-00003915 | QCNCD1782T8---- | D-SUB CONNECTOR | | 1 |
| 19 | | EEPROM | | E-00001039 | VSIMP24LC16B--A | EEPROM | | 1 |
| 20 | | FUSE 4A | | E-FS-0410-0099 | QFS-Z402F-81UAA | FUSE 4A | | 1 |
| 21 | | Hannstar PANEL (19") | | E-00003914 | VVLHSD190ME12-2 | Hanns. PANEL (19") | | 1 |
| 22 | | MCU | | E-00001061 | VSIMTV512MV---S | MCU | | 1 |
| 23 | | OSCILLATOR (24.000MHZ) | | E-00003916 | RCRSL1173T8---- | Y1 (24.000MHZ) | | 1 |
| 24 | | OSCILLATOR (24.576MHZ) | | E-00001063 | RCRSL1252T8---- | Y2 (24.576MHZ) | | 1 |
| 25 | | SCALER REALTEK | | E-IC-0401-4040 | VSIRTD2023----D | SCALER REALTEK | | 1 |
| 26 | **Hardware:** | HINGE ASSEMBLY | | HW-00003920 | MHNGM0062T8---- | HINGE ASSEMBLY | | 1 |
| 27 | | I/F BOARD SHIELD | | HW-00003922 | PSLDM6599T8---- | I/F BOARD SHIELD | | 1 |
| 28 | | INVERTER SHIELD | | HW-00003921 | PSLDM6597T8---- | INVERTER SHIELD | | 1 |
| 29 | | MAIN METAL | | HW-00003923 | LANGF2197T8---- | MAIN METAL | | 1 |
| 30 | | PANEL METAL | | HW-00003918 | LANGF2199T8---- | PANEL METAL | | 1 |
| 31 | | PANEL METAL | | HW-00003919 | LANGF2200T8---- | PANEL METAL | | 1 |
| 32 | | PWB METAL | | HW-00003917 | LANGF2198T8---- | PWB METAL | | 1 |
| 33 | **Miscellaneous:** | BOSS FOR D-SUB | | M-MS-0808-5840 | LBOSM1069D8---- | BOSS FOR D-SUB | | 2 |
| 34 | | CUSHION FOR BASE | | M-00003925 | GLEGG1478T8---- | CUSHION FOR BASE | | 4 |
| 35 | | CUSHION FOR KNOB | | M-00003926 | PCUSG1659T8---A | CUSHION FOR KNOB | | 0.25 |
| 36 | | CUSHION-A | | M-00003927 | PCUSG1671T8---- | FOR PWB | | 1 |
| 37 | | CUSHION-B | | M-00003928 | PCUSG1683T8---- | FOR CAB-B | | 1 |
| 38 | | CUSHION-C | | M-00003929 | PCUSG1680T8---- | FOR PANEL | | 1 |
| 39 | | CUSHION-D | | M-00003930 | PISLS1182D8---- | FOR I/F SCREW | | 2 |
| 40 | | FOR SHIELDING CASE | | HW-00003924 | LHLD-1467T8---- | FOR SHIELDING CASE | | 3 |
| 41 | **Packing Material:** | CARTON | | P-00003931 | SPAKC3714T8---D | CARTON | | 1 |
| 42 | | PACKING | | P-00003932 | SPAKA6615T8F--- | PACKING | | 1 |
| 43 | **Plastics:** | KNOB | | PL-00003941 | JKNBP2388T8F--- | KNOB | | 1 |
| 44 | | LENS | | PL-00003934 | HDECP2005T8F--- | LENS | | 1 |

Remark 1: Above listed items are examples, supplier can expand the rows to add more necessary items.
Remark 2: All revised RSPLs with newly added items or any change made should be highlighted and correlated with the ECN/ECR approved by ViewSonic Corporation. This is to eliminate repeated cross checks of each item between this version and prior versions.

# RECOMMENDED SPARE PARTS LIST (Q9b-1)

## ViewSonic Model Number: VS10863-1W

## Rev: 1a

## Serial No Prefix: PW3

| Item | Description | | ECR/ECN | ViewSonic P/N | Ref. P/N | Location | Universal Number# | Panel Sources |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Hanstarr (12ms) |
| 1 | **Accessories:** | POWER CORD | | A-PC-0106-0180 | QACC-1126D8D--- | POWER CORD | | 1 |
| 2 | **PC Board Assembly:** | AC ADAPTOR & INVERTER | | B-00003900 | RUNTP5642T8---- | ADAPTOR & INV. | | 1 |
| 3 | | I/F BOARD ASS'Y | | B-00003899 | DPWBN5625T89-H- | I/F BOARD ASS'Y | | 1 |
| 4 | | OSD-SW BOARD ASS'Y | | B-00003901 | DPWBN5720T8---- | SW BOARD ASS'Y | | 1 |
| 5 | **Cabinets:** | BASE | | C-00003903 | GSTN-2940T8---A | BASE | | 1 |
| 6 | | CAB-A | | C-00003904 | GCABA2361T8F--F | CAB-A | | 1 |
| 7 | | CAB-B | | C-00003905 | DCABB1877T8F--D | CAB-B | | 1 |
| 8 | | NECK | | C-00003902 | GCOVD2613T8---A | NECK | | 1 |
| 9 | **Cables:** | FFC CABLE (30 PIN) | | CB-00003907 | QCODP1217T8---- | FFC CABLE (30 PIN) | | 1 |
| 10 | | INVERTER EXTEND WIRE | | CB-00003906 | QCNWS0902T8012- | INV. EXTEND WIRE | | 2 |
| 11 | | OSD-SW WIRE | | CB-00003909 | QCNWS0906T8033A | OSD-SW WIRE | | 1 |
| 12 | | POWER BOARD GND WIRE | | CB-00003908 | QTMLW0002-8376- | POWER/B GND WIRE | | 2 |
| 13 | | SIGNAL CABLE | | CB-00002024 | QCODS1584D8D--A | SIGNAL CABLE | | 1 |
| 14 | **Documentation:** | CD Wizard (CD-ROM) | | DC-00003910 | DDSKC0064T8---- | CD Wizard (CD-ROM) | | 1 |
| 15 | | ID LABEL | | DC-00003911 | TLABM4496T8---- | ID LABEL | | 1 |
| 16 | | Quick Start Guide | | DC-00003912 | TINSE3206TG---- | Quick Start Guide | | 1 |
| 17 | **Electronic** | 30 PIN CONNECTOR | | E-00003913 | QCNCP2138T8---- | 30 PIN CONNECTOR | | 1 |
| 18 | **Components:** | D-SUB CONNECTOR | | E-00003915 | QCNCD1782T8---- | D-SUB CONNECTOR | | 1 |
| 19 | | EEPROM | | E-00001039 | VSIMP24LC16B--A | EEPROM | | 1 |
| 20 | | FUSE 4A | | E-FS-0410-0099 | QFS-Z402F-81UAA | FUSE 4A | | 1 |
| 21 | | Hannstar PANEL (19") | | E-00003914 | VVLHSD190ME12-2 | Hanns. PANEL (19") | | 1 |
| 22 | | MCU | | E-00001061 | VSIMTV512MV---S | MCU | | 1 |
| 23 | | OSCILLATOR (24.000MHZ) | | E-00003916 | RCRSL1173T8---- | Y1 (24.000MHZ) | | 1 |
| 24 | | OSCILLATOR (24.576MHZ) | | E-00001063 | RCRSL1252T8---- | Y2 (24.576MHZ) | | 1 |
| 25 | | SCALER REALTEK | | E-IC-0401-4040 | VSIRTD2023----D | SCALER REALTEK | | 1 |
| 26 | **Hardware:** | HINGE ASSEMBLY | | HW-00003920 | MHNGM0062T8---- | HINGE ASSEMBLY | | 1 |
| 27 | | I/F BOARD SHIELD | | HW-00003922 | PSLDM6599T8---- | I/F BOARD SHIELD | | 1 |
| 28 | | INVERTER SHIELD | | HW-00003921 | PSLDM6597T8---- | INVERTER SHIELD | | 1 |
| 29 | | MAIN METAL | | HW-00003923 | LANGF2197T8---- | MAIN METAL | | 1 |
| 30 | | PANEL METAL | | HW-00003918 | LANGF2199T8---- | PANEL METAL | | 1 |
| 31 | | PANEL METAL | | HW-00003919 | LANGF2200T8---- | PANEL METAL | | 1 |
| 32 | | PWB METAL | | HW-00003917 | LANGF2198T8---- | PWB METAL | | 1 |
| 33 | **Miscellaneous:** | BOSS FOR D-SUB | | M-MS-0808-5840 | LBOSM1069D8---- | BOSS FOR D-SUB | | 2 |
| 34 | | CUSHION FOR BASE | | M-00003925 | GLEGG1478T8---- | CUSHION FOR BASE | | 4 |
| 35 | | CUSHION FOR KNOB | | M-00003926 | PCUSG1659T8---A | CUSHION FOR KNOB | | 0.25 |
| 36 | | CUSHION-A | | M-00003927 | PCUSG1671T8---- | FOR PWB | | 1 |
| 37 | | CUSHION-B | | M-00003928 | PCUSG1683T8---- | FOR CAB-B | | 1 |
| 38 | | CUSHION-C | | M-00003929 | PCUSG1680T8---- | FOR PANEL | | 1 |
| 39 | | CUSHION-D | | M-00003930 | PISLS1182D8---- | FOR I/F SCREW | | 2 |
| 40 | | FOR SHIELDING CASE | | HW-00003924 | LHLD-1467T8---- | FOR SHIELDING CASE | | 3 |
| 41 | **Packing Material:** | CARTON | | P-00003931 | SPAKC3714T8---D | CARTON | | 1 |
| 42 | | PACKING | | P-00003932 | SPAKA6615T8F--- | PACKING | | 1 |
| 43 | **Plastics:** | KNOB | | PL-00003933 | JKNBP2388T8F--B | KNOB | | 1 |
| 44 | | LENS | | PL-00003934 | HDECP2005T8F--- | LENS | | 1 |

Remark 1: Above listed items are examples, supplier can expand the rows to add more necessary items.
Remark 2: All revised RSPLs with newly added items or any change made should be highlighted and correlated with the ECN/ECR

# BOM LIST (Q9-1)

**ViewSonic Model Number: VS10863-1W**

**Rev: 1a**

**Serial No Prefix: PW1**

| Item | ViewSonic P/N | Ref. P/N | Description | Location | Universal number# | Q'ty |
|---|---|---|---|---|---|---|
| 1 | CB-00003908 | QTMLW0002-8376- | POWER BOARD GND WIRE | POWER BOARD GND WIRE | | 2 |
| 2 | C-00003935 | GSTN-2940T8---- | BASE | BASE | | 1 |
| 3 | C-00003938 | GCOVD2613T8---- | NECK | NECK | | 1 |
| 4 | M-00003925 | GLEGG1478T8---- | BASE*4 | BASE*4 | | 4 |
| 5 | HW-00003920 | MHNGM0062T8---- | HINGE | HINGE | | 1 |
| 6 | #N/A | XEASD35P12000-- | HINGE/NECK*6 | HINGE/NECK*6 | | 6 |
| 7 | #N/A | XBSSB40P08000-A | HINGE/CAB-B*4 | HINGE/CAB-B*4 | | 4 |
| 8 | C-00003936 | GCABA2361T8F--E | CAB-A | CAB-A | | 1 |
| 9 | C-00003937 | DCABB1877T8F--A | CAB-B ASM | CAB-B ASM | | 1 |
| 10 | PL-00003941 | JKNBP2388T8F--- | KNOB | KNOB | | 1 |
| 11 | PL-00003934 | HDECP2005T8F--- | LENS | LENS | | 1 |
| 12 | M-MS-0808-5840 | LBOSM1069D8---- | VGA BOSS | VGA BOSS | | 2 |
| 13 | M-SCW-0824-0464 | XETSD40P10000-- | CAB-A/CHASSIS*2 | CAB-A/CHASSIS*2 | | 2 |
| 14 | M-SCW-0824-6739 | XBMSD40P08TV0-- | GROUND*1 | GROUND*1 | | 1 |
| 15 | B-00003901 | DPWBN5720T8---- | KEY BOARD ASS'Y | KEY BOARD ASS'Y | | 1 |
| 16 | CB-00003909 | QCNWS0906T8033A | KEY BOARD WIRE | KEY BOARD WIRE | | 1 |
| 17 | M-00003926 | PCUSG1659T8---A | KNOB USE | KNOB USE | | 0.25 |
| 18 | #N/A | TLABZ4916T8---- | HIGH VOLTAGE LABEL | HIGH VOLTAGE LABEL | | 1 |
| 19 | DC-00003912 | TINSE3206TG---- | USER'S MANUAL | USER'S MANUAL | | 1 |
| 20 | M-LB-0813-0527 | TLABZ3903D8---- | UPC LABEL | UPC LABEL | | 1 |
| 21 | M-MS-0808-8408 | PISL-1281D8---- | PROTECT SHEET | PROTECT SHEET | | 1 |
| 22 | #N/A | SPAKW1260T8---- | PALLET | PALLET | | 0.02 |
| 23 | #N/A | SSAKH1356D8-T-B | SET BAG | SET BAG | | 1 |
| 24 | #N/A | SSAKD0010-1-T-- | BAG | BAG | | 1 |
| 25 | #N/A | SPAKK6309D8---- | COVER PAPER | COVER PAPER | | 0.12 |
| 26 | #N/A | ZTAPEQ072T050-B | TAPE FOR CARTON | TAPE FOR CARTON | | 1.2 |
| 27 | DC-00003940 | TLABM4495T8---- | ID LABEL | ID LABEL | | 1 |
| 28 | P-00003932 | SPAKA6615T8F--- | PACKING FOAM | PACKING FOAM | | 1 |
| 29 | P-00003931 | SPAKC3714T8---D | CARTON | CARTON | | 1 |
| 30 | A-PC-0106-0180 | QACC-1126D8D--- | AC POWER CORD(1.8M) | AC POWER CORD(1.8M) | | 1 |
| 31 | CB-00002024 | QCODS1584D8D--A | SIGNAL CABLE (1.8M BLACK) | SIGNAL CABLE (1.8M BLACK) | | 1 |
| 32 | DC-00003939 | DDSKC0063T8---- | CD-DRIVE | CD-DRIVE | | 1 |
| 33 | #N/A | ZTAPEY010G060-- | TYPE FOR PROTECT SHEET | TYPE FOR PROTECT SHEET | | 80 |
| 34 | #N/A | TLAB-5523D8---- | S/N LABEL | S/N LABEL | | 1 |
| 35 | #N/A | TLAB-5657T8---- | HI-POT PASS LABEL | HI-POT PASS LABEL | | 1 |

**BOM LIST** CPWB-Q9--T8HSD-

| Item | ViewSonic P/N | Ref. P/N | Description | Location | Universal number# | Q'ty |
|---|---|---|---|---|---|---|
| 1 | E-00003914 | VVLHSD190ME12-2 | HSD 19" PANEL (12ms) | HSD 19" PANEL (12ms) | | 1 |
| 2 | #N/A | VVLHSD190ME12N2 2nd | | | | 1 |
| 3 | #N/A | VVLHSD190ME12V2 2nd | | | | 1 |
| 4 | B-00003900 | RUNTP5642T8---- | AC ADAPTOR & INVERTER | AC ADAPTOR & INVERTER | | 1 |
| 5 | #N/A | RUNTP5651T8---- 2nd | | | | 1 |
| 6 | B-00003899 | DPWBN5625T89-H- | I/F BOARD ASS'Y | I/F BOARD ASS'Y | | 1 |
| 7 | CB-00003907 | QCODP1217T8---- | LVDS(FFC) CABLE | LVDS(FFC) CABLE | | 1 |
| 8 | CB-00003906 | QCNWS0902T8012- | INVERTER EXTEND WIRE | INVERTER EXTEND WIRE | | 2 |
| 9 | HW-00003923 | LANGF2197T8---- | CHASSIS | CHASSIS | | 1 |
| 10 | HW-00003917 | LANGF2198T8---- | PWB USE | PWB USE | | 1 |
| 11 | HW-00003918 | LANGF2199T8---- | PANEL USE | PANEL USE | | 1 |
| 12 | HW-00003919 | LANGF2200T8---- | PANEL USE | PANEL USE | | 1 |
| 13 | M-SCW-0824-6733 | XBMSD30P06000-- | LANGF2198/PWB*2 | LANGF2198/PWB*2 | | 2 |
| 14 | HW-00003921 | PSLDM6597T8---- | SHIELDING CASE | SHIELDING CASE | | 1 |
| 15 | HW-00003924 | LHLD-1467T8---- | SHIELDING CASE USE | SHIELDING CASE USE | | 3 |
| 16 | #N/A | XBSSE30P06000-- | PANEL/LANGF2199*1,CHASSIS*1 | PANEL/LANGF2199*1,CHASSIS*1 | | 2 |
| 17 | M-SCW-0824-0463 | XEASD30P10000-- | CAB-A/LANGF2199*1,LANGF2200*1 | CAB-A/LANGF2199*1,LANGF2200*1 | | 2 |
| 18 | M-00003927 | PCUSG1671T8---- | PWB USE | PWB USE | | 1 |
| 19 | #N/A | ZTAPEL040S030-- | 40MM*1,50MM*2,60MM*1 | 40MM*1,50MM*2,60MM*1 | | 200 |
| 20 | #N/A | ZTAPEL025S030-- | 50MM*2 | 50MM*2 | | 100 |
| 21 | #N/A | ZTAPEY020W066U- | 50MM*3,70MM*1 | 50MM*3,70MM*1 | | 220 |
| 22 | #N/A | XBJSD30P08000-- | LANGF2198/PSLDM6597*1,CHASSIS*4,PANEL /LANGF2200*1 | LANGF2198/PSLDM6597*1,CHASSIS*4,PANEL /LANGF2200*1 | | 6 |
| 23 | #N/A | XBJSD30P04000-- | LANGF2198/PWB*2 | LANGF2198/PWB*2 | | 2 |
| 24 | HW-00003922 | PSLDM6599T8---- | I/F BOARD SHIELDING CASE | I/F BOARD SHIELDING CASE | | 1 |
| 25 | M-00003928 | PCUSG1683T8---- | CAB-B*2 | CAB-B*2 | | 2 |
| 26 | M-00003929 | PCUSG1680T8---- | HT PANEL USE | HT PANEL USE | | 1 |
| 27 | M-00003930 | PISLS1182D8---- | FOR I/F BOARD SCREW | FOR I/F BOARD SCREW | | 2 |

**BOM LIST** DCABB1877T8F--A

| Item | ViewSonic P/N | Ref. P/N | Description | Location | Universal number# | Q'ty |
|---|---|---|---|---|---|---|
| 1 | #N/A | GCABB1877T8F--A | CAB-A | CAB-A | | 1 |
| 2 | #N/A | LANGF2194T8---- | VESA METAL | VESA METAL | | 4 |

# BOM LIST (Q9b-1)

**ViewSonic Model Number: VS10863-1W**

**Rev: 1a**

**Serial No Prefix: PW3**

| Item | ViewSonic P/N | Ref. P/N | Description | Location | Universal number# | Q'ty |
|---|---|---|---|---|---|---|
| 1 | CB-00003908 | QTMLW0002-8376- | POWER BOARD GND WIRE | POWER BOARD GND WIRE | | 2 |
| 2 | C-00003903 | GSTN-2940T8---A | BASE | BASE | | 1 |
| 3 | C-00003902 | GCOVD2613T8---A | NECK | NECK | | 1 |
| 4 | M-00003925 | GLEGG1478T8---- | BASE*4 | BASE*4 | | 4 |
| 5 | HW-00003920 | MHNGM0062T8---- | HINGE | HINGE | | 1 |
| 6 | #N/A | XEASD35P12000-- | HINGE/NECK*6 | HINGE/NECK*6 | | 6 |
| 7 | #N/A | XBSSB40P08000-A | HINGE/CAB-B*4 | HINGE/CAB-B*4 | | 4 |
| 8 | C-00003904 | GCABA2361T8F--F | CAB-A | CAB-A | | 1 |
| 9 | C-00003905 | DCABB1877T8F--D | CAB-B ASM | CAB-B ASM | | 1 |
| 10 | PL-00003933 | JKNBP2388T8F--B | KNOB | KNOB | | 1 |
| 11 | PL-00003934 | HDECP2005T8F--- | LENS | LENS | | 1 |
| 12 | M-MS-0808-5840 | LBOSM1069D8---- | VGA BOSS | VGA BOSS | | 2 |
| 13 | M-SCW-0824-0464 | XETSD40P10000-- | CAB-A/CHASSIS*2 | CAB-A/CHASSIS*2 | | 2 |
| 14 | M-SCW-0824-6739 | XBMSD40P08TV0-- | GROUND*1 | GROUND*1 | | 1 |
| 15 | B-00003901 | DPWBN5720T8---- | KEY BOARD ASS'Y | KEY BOARD ASS'Y | | 1 |
| 16 | CB-00003909 | QCNWS0906T8033A | KEY BOARD WIRE | KEY BOARD WIRE | | 1 |
| 17 | M-00003926 | PCUSG1659T8---A | KNOB USE | KNOB USE | | 0.25 |
| 18 | #N/A | TLABZ4916T8---- | HIGH VOLTAGE LABEL | HIGH VOLTAGE LABEL | | 1 |
| 19 | DC-00003912 | TINSE3206TG---- | USER'S MANUAL | USER'S MANUAL | | 1 |
| 20 | M-LB-0813-0527 | TLABZ3903D8---- | UPC LABEL | UPC LABEL | | 2 |
| 21 | M-MS-0808-8408 | PISL-1281D8---- | PROTECT SHEET | PROTECT SHEET | | 1 |
| 22 | #N/A | SPAKW1260T8---- | PALLET | PALLET | | 0.02 |
| 23 | #N/A | SSAKH1356D8-T-B | SET BAG | SET BAG | | 1 |
| 24 | #N/A | SSAKD0010-1-T-- | BAG | BAG | | 1 |
| 25 | #N/A | SPAKK6309D8---- | COVER PAPER | COVER PAPER | | 0.12 |
| 26 | #N/A | ZTAPEQ072T050-B | TAPE FOR CARTON | TAPE FOR CARTON | | 1.2 |
| 27 | DC-00003911 | TLABM4496T8---- | ID LABEL | ID LABEL | | 1 |
| 28 | P-00003932 | SPAKA6615T8F--- | PACKING FOAM | PACKING FOAM | | 1 |
| 29 | P-00003931 | SPAKC3714T8---D | CARTON | CARTON | | 1 |
| 30 | A-PC-0106-0180 | QACC-1126D8D--- | AC POWER CORD(1.8M) | AC POWER CORD(1.8M) | | 1 |
| 31 | CB-00002024 | QCODS1584D8D--A | SIGNAL CABLE (1.8M BLACK) | SIGNAL CABLE (1.8M BLACK) | | 1 |
| 32 | DC-00003910 | DDSKC0064T8---- | CD-DRIVE | CD-DRIVE | | 1 |
| 33 | #N/A | ZTAPEY010G060-- | TYPE FOR PROTECT SHEET | TYPE FOR PROTECT SHEET | | 80 |
| 34 | #N/A | TLAB-5523D8---- | S/N LABEL | S/N LABEL | | 1 |
| 35 | #N/A | TLAB-5657T8---- | HI-POT PASS LABEL | HI-POT PASS LABEL | | 1 |

**BOM LIST** CPWB-Q9--T8HSD-

| Item | ViewSonic P/N | Ref. P/N | Description | Location | Universal number# | Q'ty |
|---|---|---|---|---|---|---|
| 1 | E-00003914 | VVLHSD190ME12-2 | HSD 19" PANEL (12ms) | HSD 19" PANEL (12ms) | | 1 |
| 2 | #N/A | VVLHSD190ME12N2 2nd | | | | 1 |
| 3 | #N/A | VVLHSD190ME12V2 2nd | | | | 1 |
| 4 | B-00003900 | RUNTP5642T8---- | AC ADAPTOR & INVERTER | AC ADAPTOR & INVERTER | | 1 |
| 5 | #N/A | RUNTP5651T8---- 2nd | | | | 1 |
| 6 | B-00003899 | DPWBN5625T89-H- | I/F BOARD ASS'Y | I/F BOARD ASS'Y | | 1 |
| 7 | CB-00003907 | QCODP1217T8---- | LVDS(FFC) CABLE | LVDS(FFC) CABLE | | 1 |
| 8 | CB-00003906 | QCNWS0902T8012- | INVERTER EXTEND WIRE | INVERTER EXTEND WIRE | | 2 |
| 9 | HW-00003923 | LANGF2197T8---- | CHASSIS | CHASSIS | | 1 |
| 10 | HW-00003917 | LANGF2198T8---- | PWB USE | PWB USE | | 1 |
| 11 | HW-00003918 | LANGF2199T8---- | PANEL USE | PANEL USE | | 1 |
| 12 | HW-00003919 | LANGF2200T8---- | PANEL USE | PANEL USE | | 1 |
| 13 | M-SCW-0824-6733 | XBMSD30P06000-- | LANGF2198/PWB*2 | LANGF2198/PWB*2 | | 2 |
| 14 | HW-00003921 | PSLDM6597T8---- | SHIELDING CASE | SHIELDING CASE | | 1 |
| 15 | HW-00003924 | LHLD-1467T8---- | SHIELDING CASE USE | SHIELDING CASE USE | | 3 |
| 16 | #N/A | XBSSE30P06000-- | PANEL/LANGF2199*1,CHASSIS*1 | PANEL/LANGF2199*1,CHASSIS*1 | | 2 |
| 17 | M-SCW-0824-0463 | XEASD30P10000-- | CAB-A/LANGF2199*1,LANGF2200*1 | CAB-A/LANGF2199*1,LANGF2200*1 | | 2 |
| 18 | M-00003927 | PCUSG1671T8---- | PWB USE | PWB USE | | 1 |
| 19 | #N/A | ZTAPEL040S030-- | 40MM*1,50MM*2,60MM*1 | 40MM*1,50MM*2,60MM*1 | | 200 |
| 20 | #N/A | ZTAPEL025S030-- | 50MM*2 | 50MM*2 | | 100 |
| 21 | #N/A | ZTAPEY020W066U- | 50MM*3,70MM*1 | 50MM*3,70MM*1 | | 220 |
| 22 | M-SCW-0824-6733 | XBJSD30P08000-- | LANGF2198/PSLDM6597*1,CHASSIS*4,PANEL /LANGF2200*1 | LANGF2198/PSLDM6597*1,CHASSIS*4,PANEL /LANGF2200*1 | | 6 |
| 23 | #N/A | XBJSD30P04000-- | LANGF2198/PWB*2 | LANGF2198/PWB*2 | | 2 |
| 24 | HW-00003922 | PSLDM6599T8---- | I/F BOARD SHIELDING CASE | I/F BOARD SHIELDING CASE | | 1 |
| 25 | M-00003928 | PCUSG1683T8---- | CAB-B*2 | CAB-B*2 | | 2 |
| 26 | M-00003929 | PCUSG1680T8---- | HT PANEL USE | HT PANEL USE | | 1 |
| 27 | M-00003930 | PISLS1182D8---- | FOR I/F BOARD SCREW | FOR I/F BOARD SCREW | | 2 |

**BOM LIST** DCABB1877T8F--A

| Item | ViewSonic P/N | Ref. P/N | Description | Location | Universal number# | Q'ty |
|---|---|---|---|---|---|---|
| 1 | #N/A | GCABB1877T8F--A | CAB-A | CAB-A | | 1 |
| 2 | #N/A | LANGF2194T8---- | VESA METAL | VESA METAL | | 4 |

## 8. Exploded Diagram And Spare Parts List

### EXPLODED PARTS LIST (Q9-1)

ViewSonic Model Number: VS10863-1W

Rev: 1a

Serial No. Prefix: PW1

| Item | ViewSonic P/N | Ref. P/N | Description | Q'ty |
|---|---|---|---|---|
| 1 | C-00003936 | GCABA2361T8F--E | CAB-A | 1 |
| 2 | HW-00003918 | LANGF2199T8---- | PANEL USE | 1 |
| 3 | #N/A | VVLHSD190ME12-- | HANNSTAR 19" PANEL | 1 |
| 4 | HW-00003923 | LANGF2197T8---- | CHASSIS | 1 |
| 5 | HW-00003919 | LANGF2200T8---- | PANEL USE | 1 |
| 6 | HW-00003922 | PSLDM6599T8---- | I/F BOARD SHIELDING CASE | 1 |
| 7 | B-00003899 | DPWBN5625T89-H- | I/F BOARD | 1 |
| 8 | M-00003927 | PCUSG1671T8---- | PWB USE | 1 |
| 9 | B-00003900 | RUNTP5642T8---- | AC ADAPTOR & INVERTER | 1 |
| 10 | C-00003937 | DCABB1877T8F--A | CAB-B ASM | 1 |
| 11 | #N/A | LANGF2194T8---- | VESA METAL | 4 |
| 12 | HW-00003924 | LHLD-1467T8---- | SHIELDING CASE USE | 3 |
| 13 | HW-00003921 | PSLDM6597T8---- | SHIELDING CASE | 1 |
| 14 | #N/A | MHNGM0062T8---B | HINGE | 1 |
| 15 | C-00003938 | GCOVD2613T8---- | NECK | 1 |
| 16 | C-00003935 | GSTN-2940T8---- | BASE | 1 |
| 17 | M-00003925 | GLEGG1478T8---- | BASE*4 | 4 |
| 18 | HW-00003917 | LANGF2198T8---- | PWB USE | 1 |
| 19 | PL-00003941 | JKNBP2388T8F--- | KNOB | 1 |
| 20 | B-00003901 | DPWBN5720T8---- | KEY BOARD ASS'Y | 1 |
| 21 | PL-00003934 | HDECP2005T8F--- | LENS | 1 |

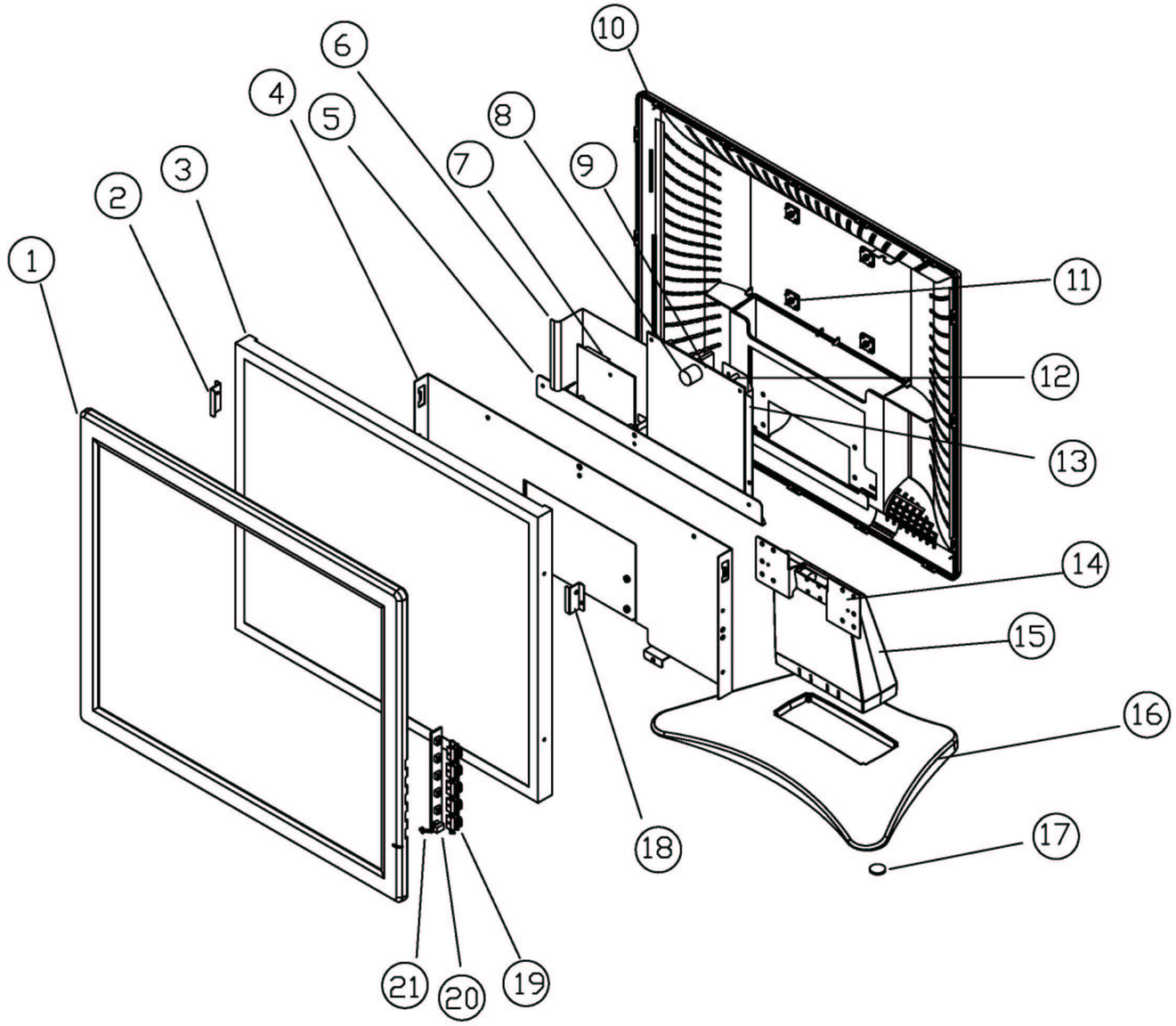
### EXPLODED PARTS LIST (Q9b-1)

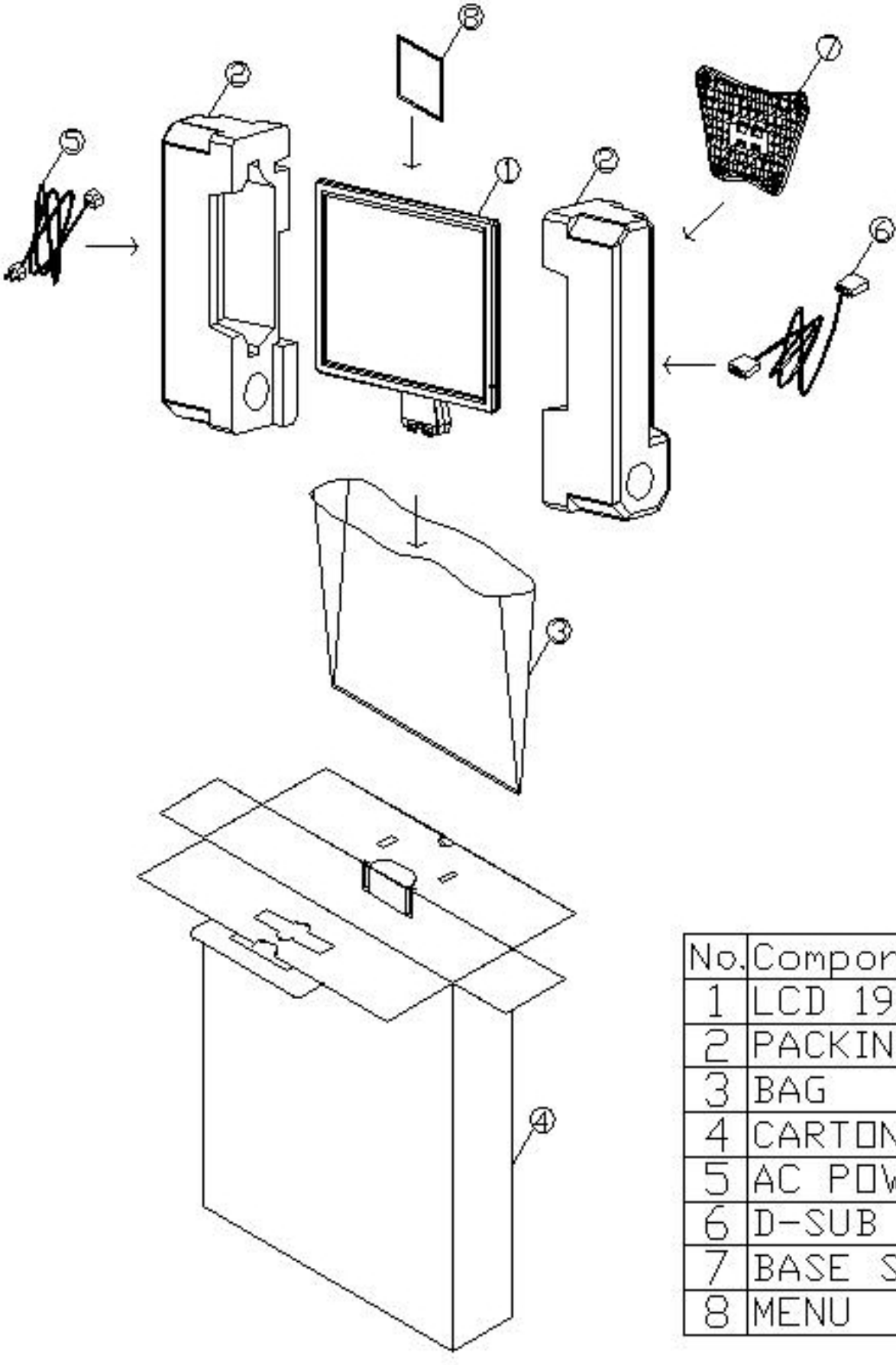
ViewSonic Model Number: VS10863-1W

Rev: 1a

Serial No. Prefix: PW3

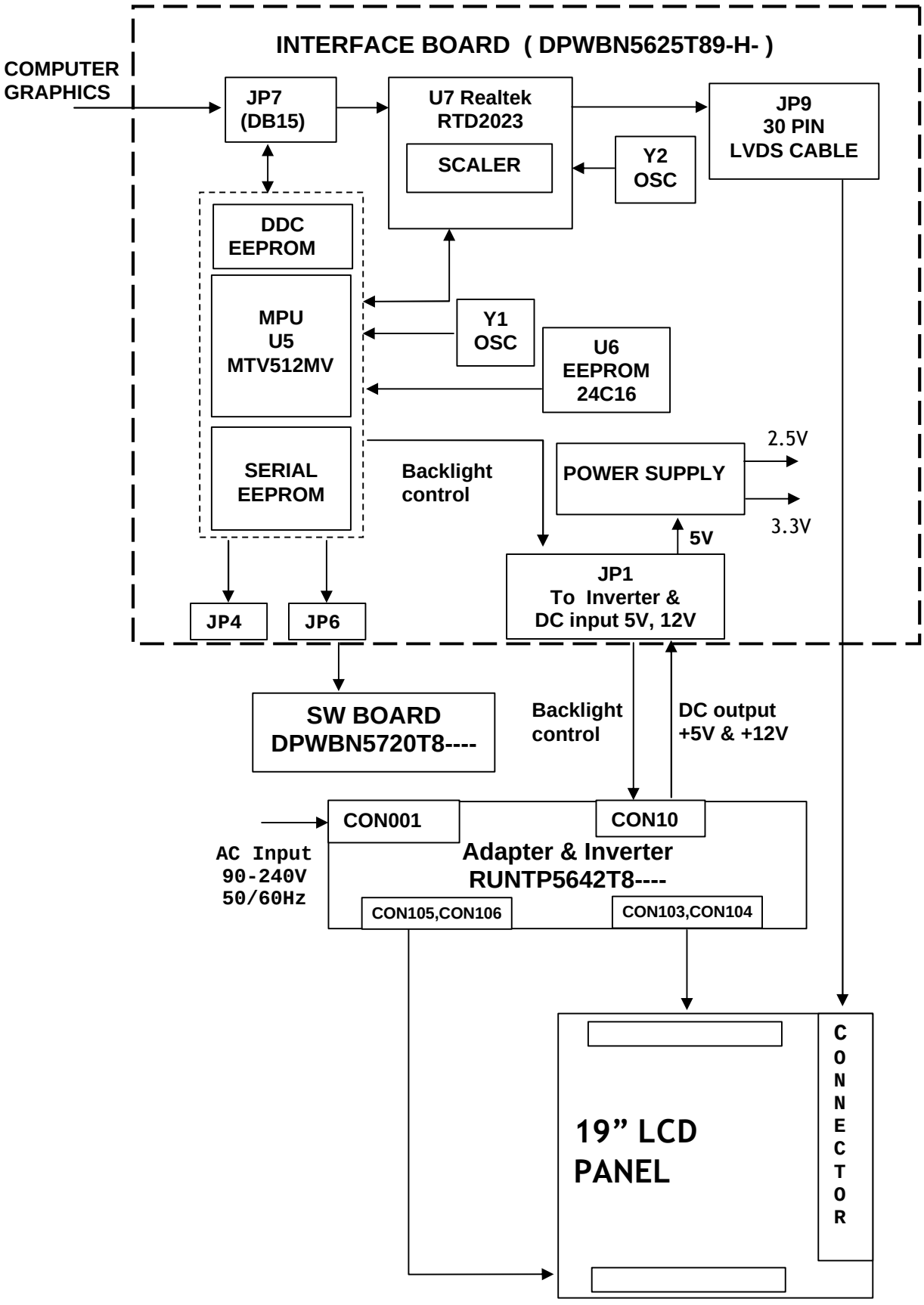
| Item | ViewSonic P/N | Ref. P/N | Description | Q'ty |
|---|---|---|---|---|
| 1 | C-00003904 | GCABA2361T8F--F | CAB-A | 1 |
| 2 | HW-00003918 | LANGF2199T8---- | PANEL USE | 1 |
| 3 | #N/A | VVLHSD190ME12-- | HANNSTAR 19" PANEL | 1 |
| 4 | HW-00003923 | LANGF2197T8---- | CHASSIS | 1 |
| 5 | HW-00003919 | LANGF2200T8---- | PANEL USE | 1 |
| 6 | HW-00003922 | PSLDM6599T8---- | I/F BOARD SHIELDING CASE | 1 |
| 7 | B-00003899 | DPWBN5625T89-H- | I/F BOARD | 1 |
| 8 | M-00003927 | PCUSG1671T8---- | PWB USE | 1 |
| 9 | B-00003900 | RUNTP5642T8---- | AC ADAPTOR & INVERTER | 1 |
| 10 | C-00003905 | DCABB1877T8F--D | CAB-B ASM | 1 |
| 11 | #N/A | LANGF2194T8---- | VESA METAL | 4 |
| 12 | HW-00003924 | LHLD-1467T8---- | SHIELDING CASE USE | 3 |
| 13 | HW-00003921 | PSLDM6597T8---- | SHIELDING CASE | 1 |
| 14 | #N/A | MHNGM0062T8---B | HINGE | 1 |
| 15 | C-00003902 | GCOVD2613T8---A | NECK | 1 |
| 16 | C-00003903 | GSTN-2940T8---A | BASE | 1 |
| 17 | M-00003925 | GLEGG1478T8---- | BASE*4 | 4 |
| 18 | HW-00003917 | LANGF2198T8---- | PWB USE | 1 |
| 19 | PL-00003933 | JKNBP2388T8F--B | KNOB | 1 |
| 20 | B-00003901 | DPWBN5720T8---- | KEY BOARD ASS'Y | 1 |
| 21 | PL-00003934 | HDECP2005T8F--- | LENS | 1 |



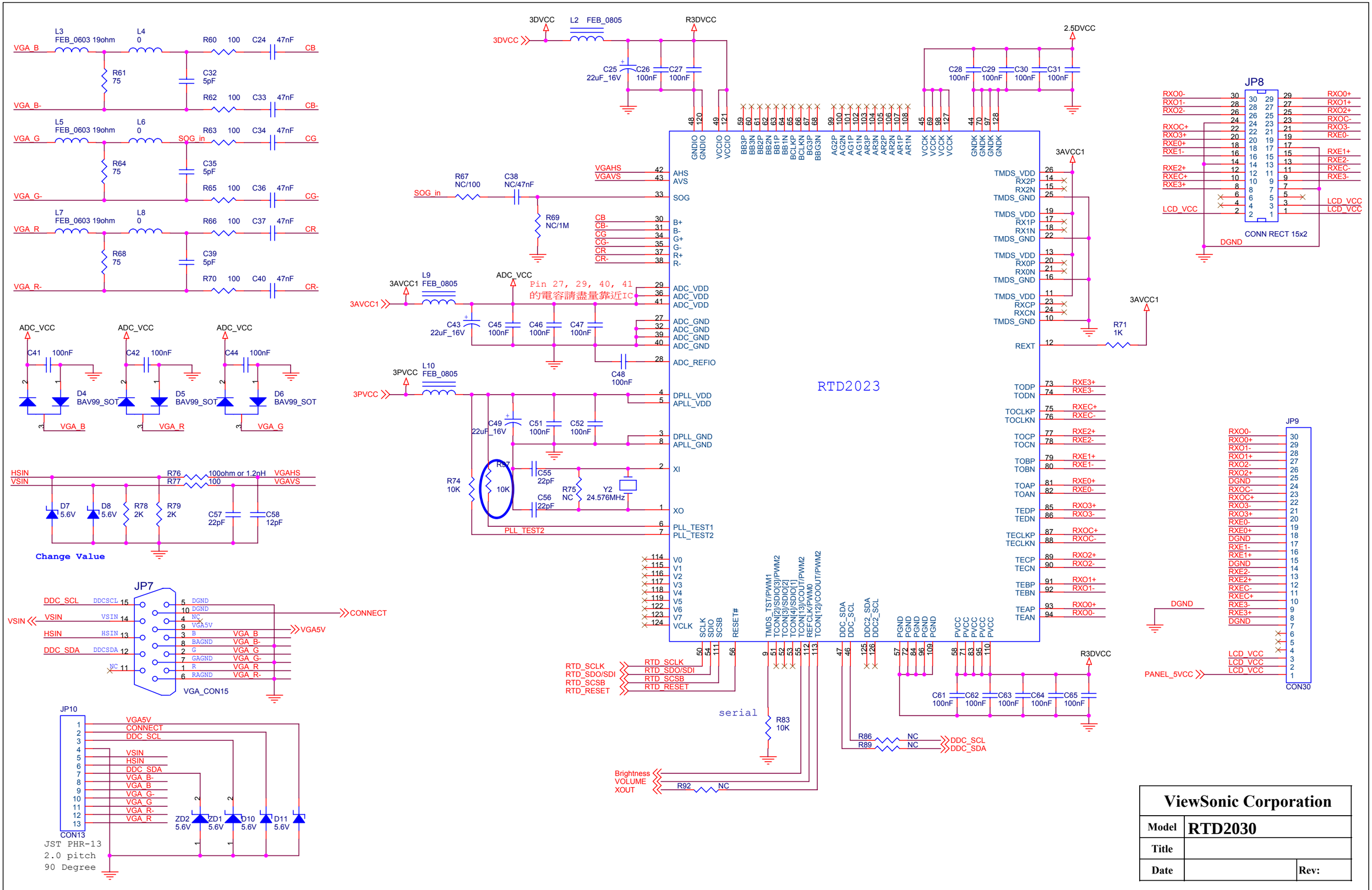


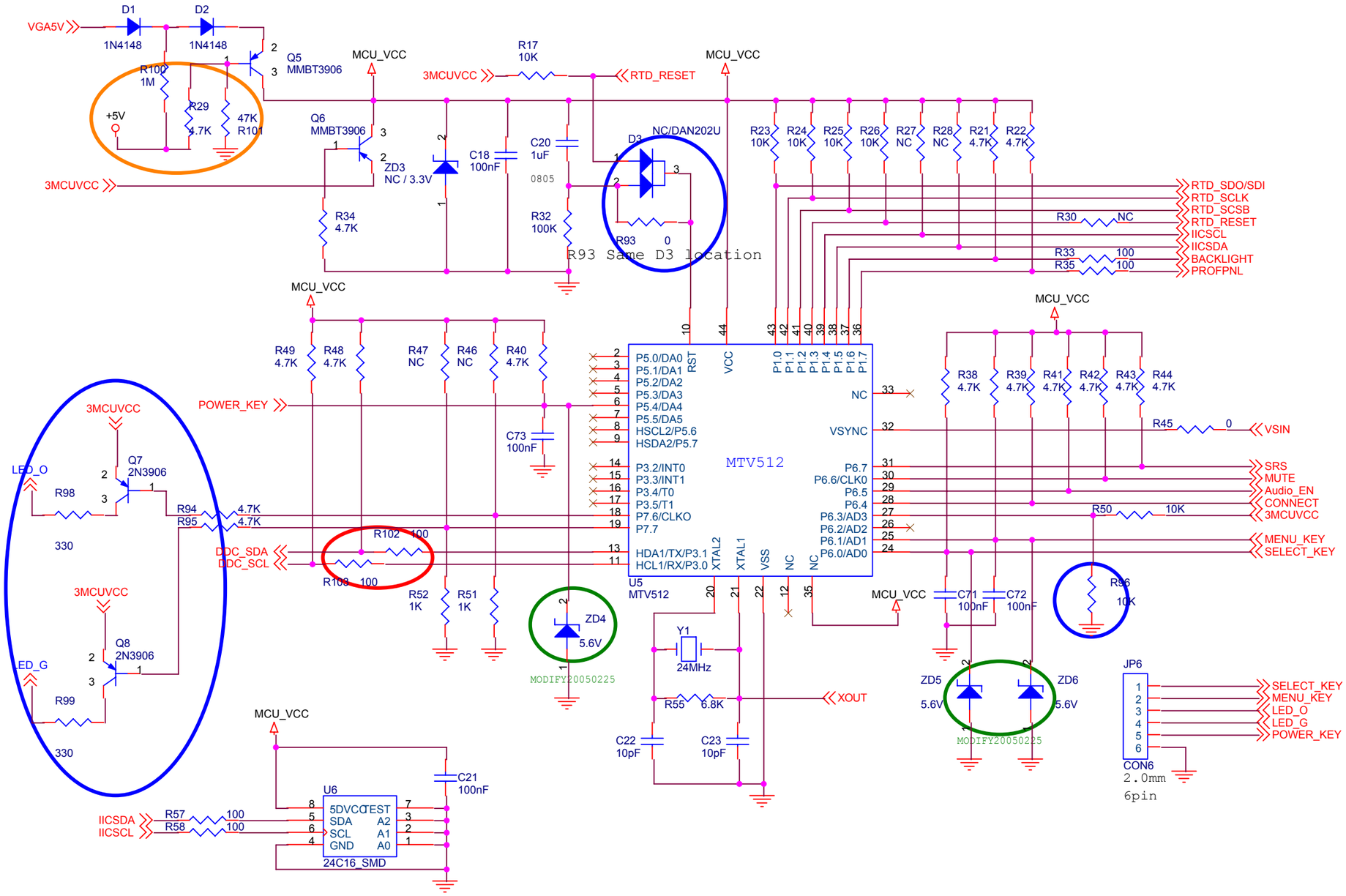
| No. | Component |
|---|---|
| 1 | LCD 19" |
| 2 | PACKING |
| 3 | BAG |
| 4 | CARTON |
| 5 | AC POWER CORD |
| 6 | D-SUB CABLE |
| 7 | BASE SET |
| 8 | MENU |

## 9. Block Diagram

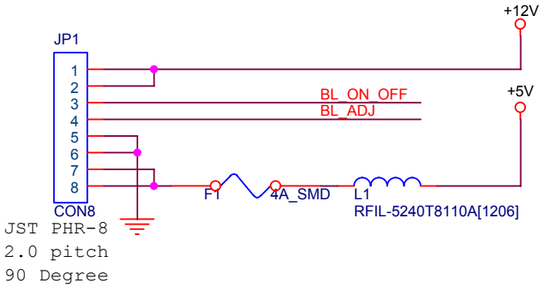


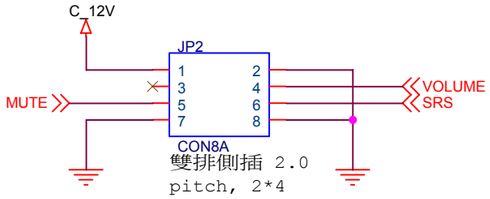
# 10. Schematic Diagrams

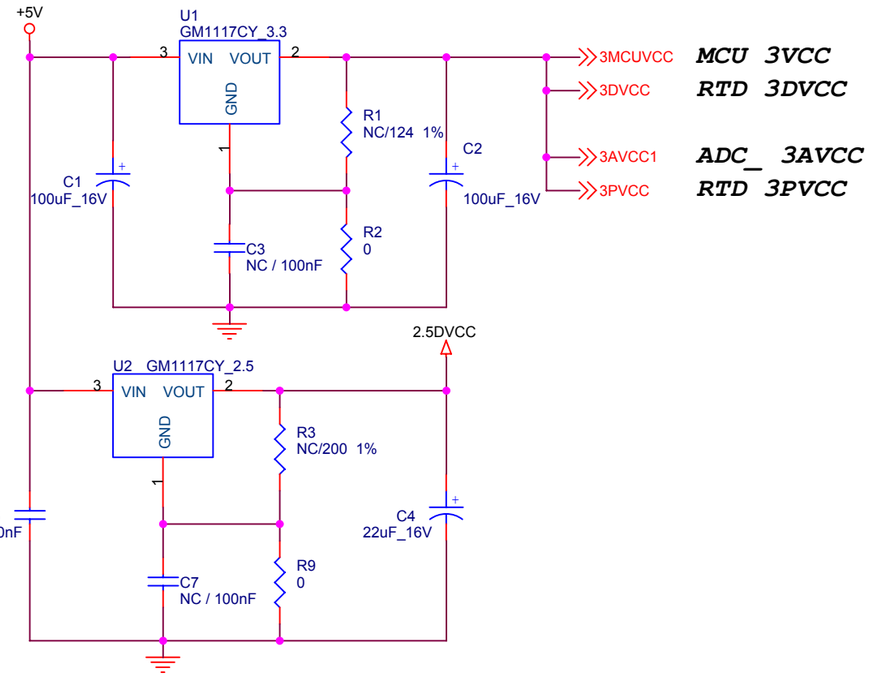


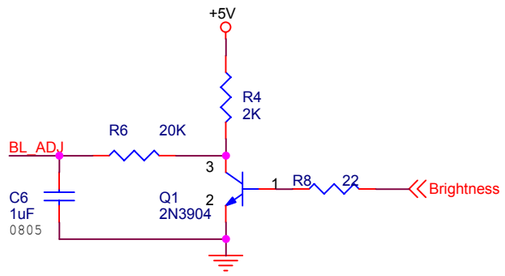


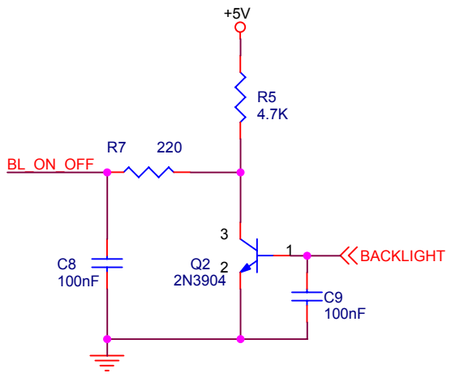

| ViewSonic Corporation | | |
|---|---|---|
| Model | MCU | |
| Title | | |
| Date | | Rev: |

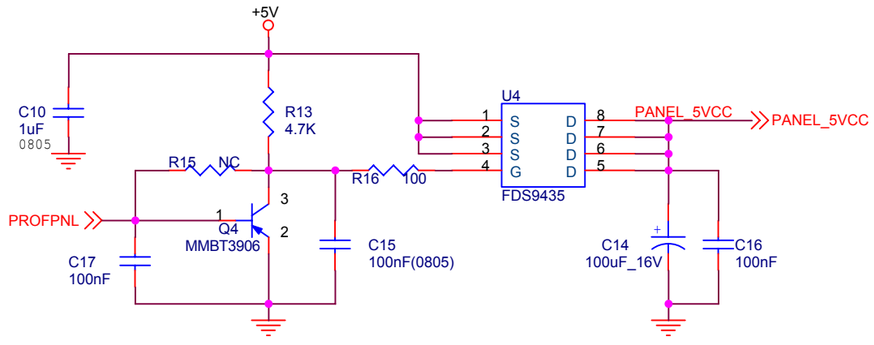


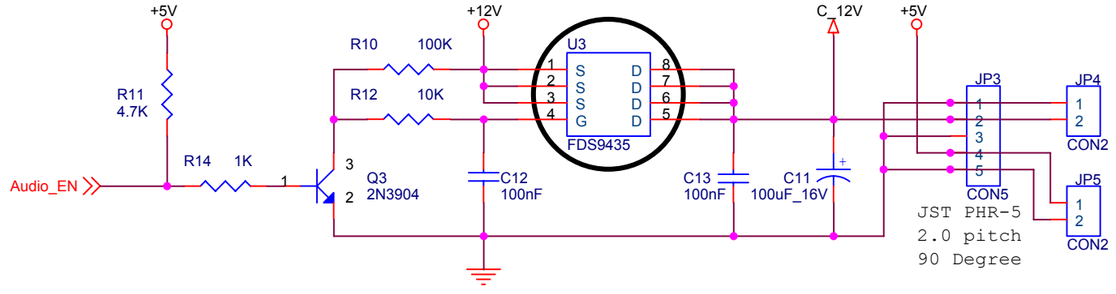



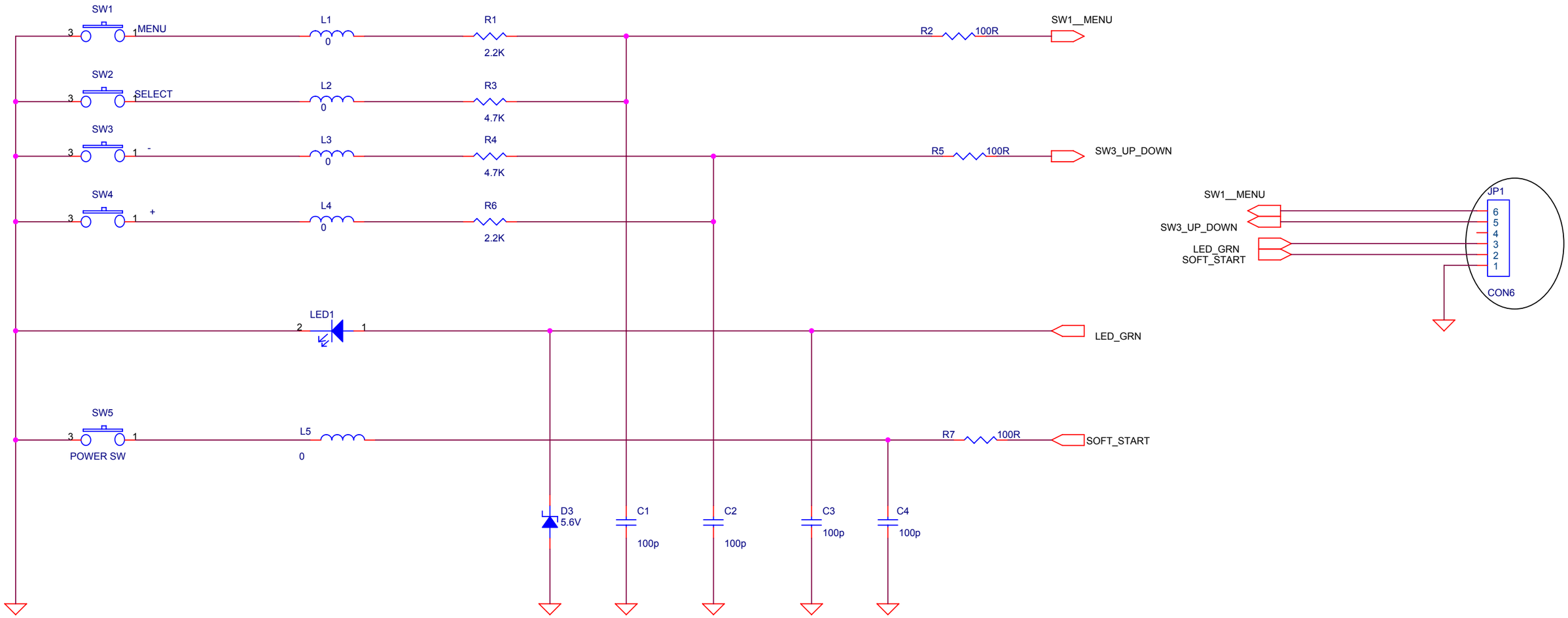



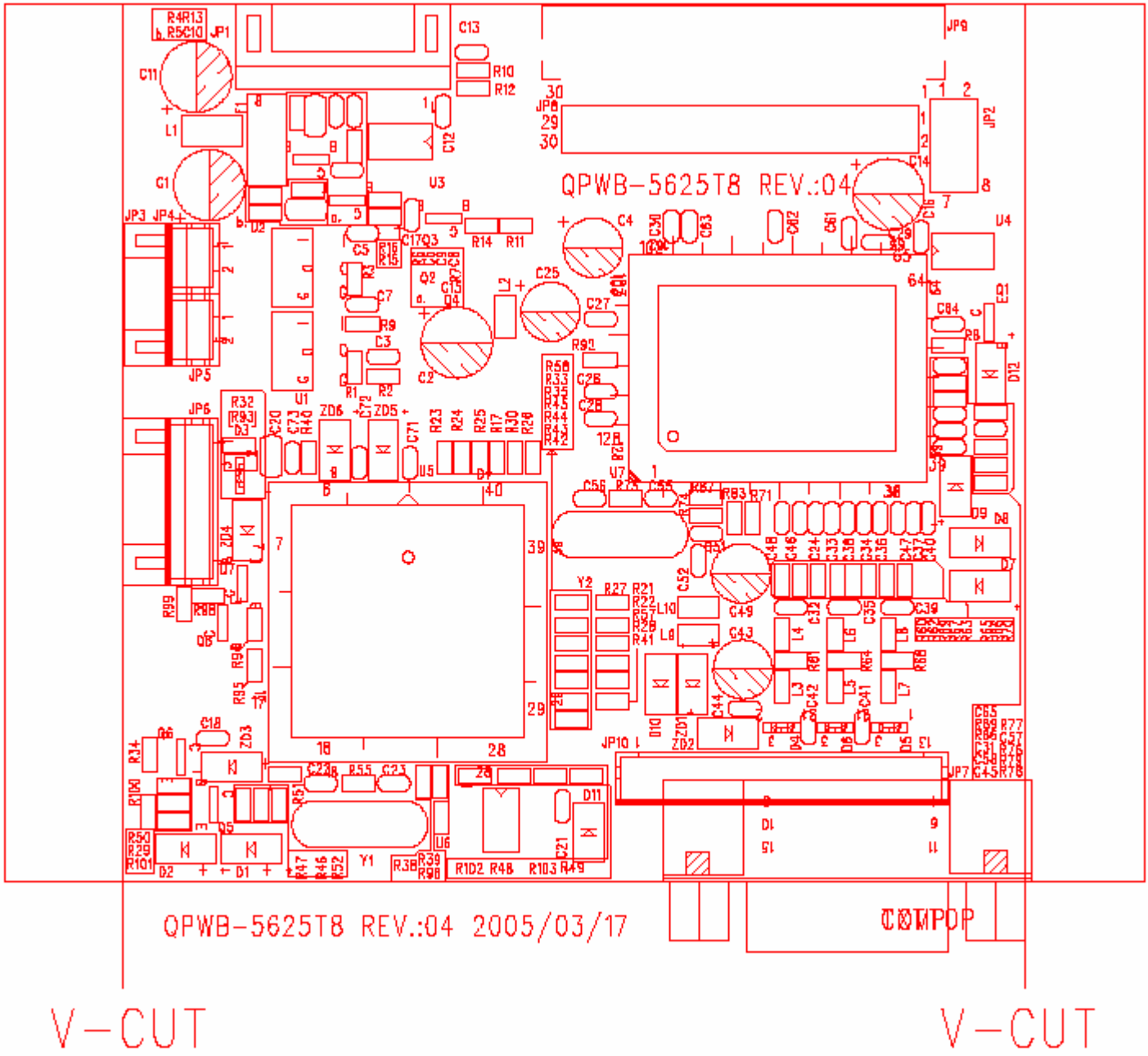

| ViewSonic Corporation | | |
|---|---|---|
| Model | POWER | |
| Title | | |
| Date | | Rev: |

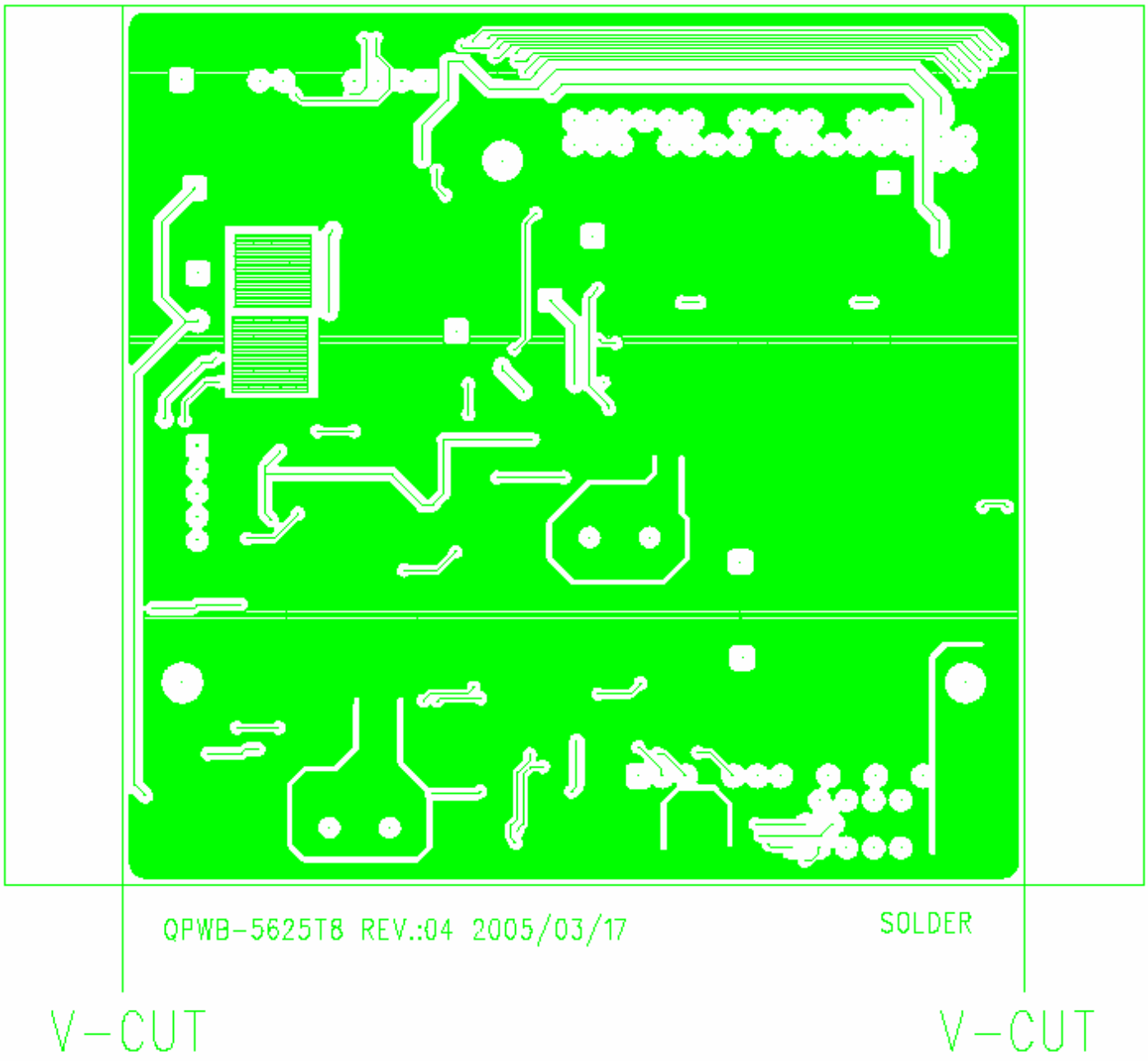


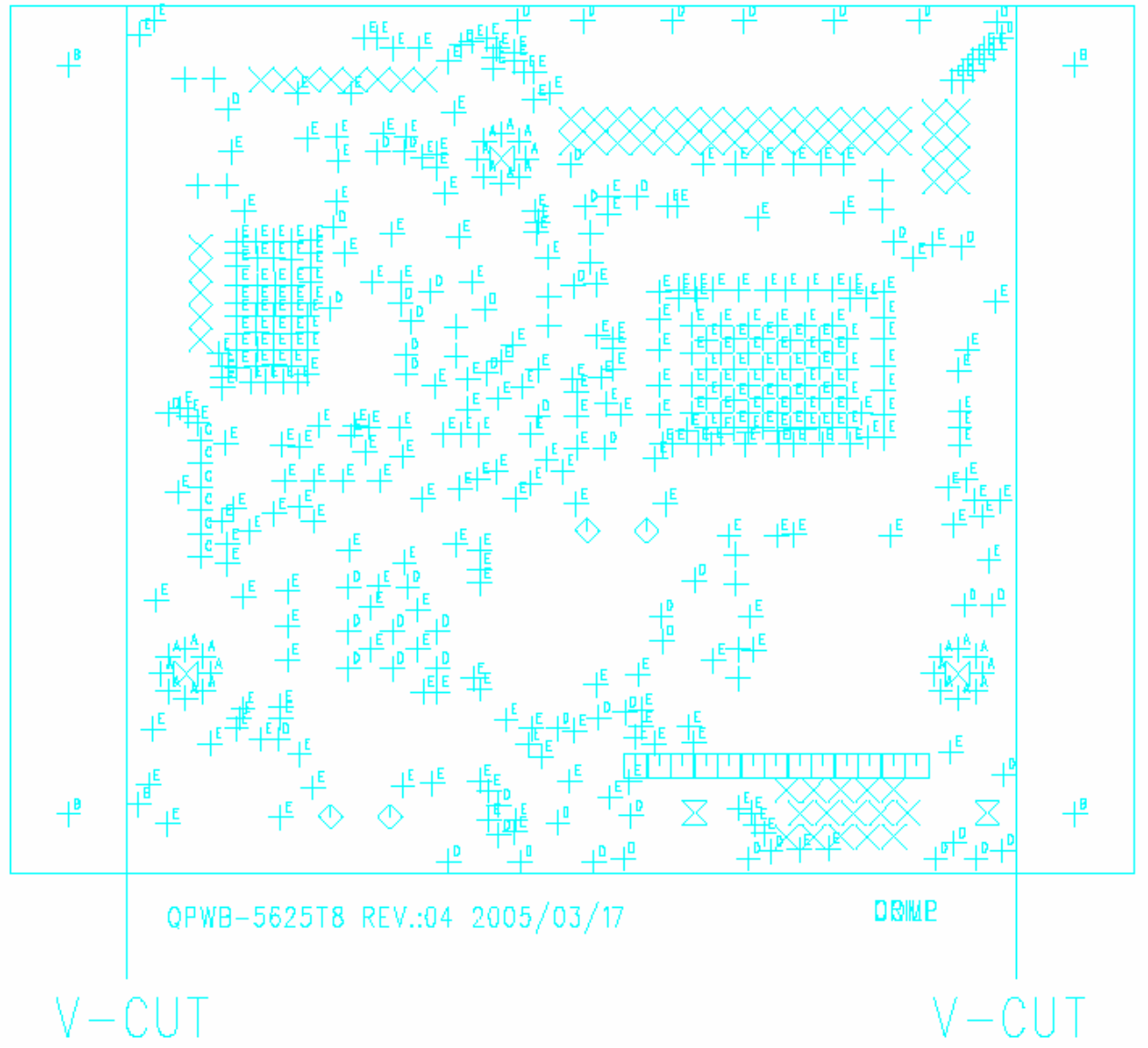

| ViewSonic Corporation | | |
|---|---|---|
| Model | KeyBoard | |
| Title | | |
| Date | | Rev: |

# 11. PCB Layout Diagrams

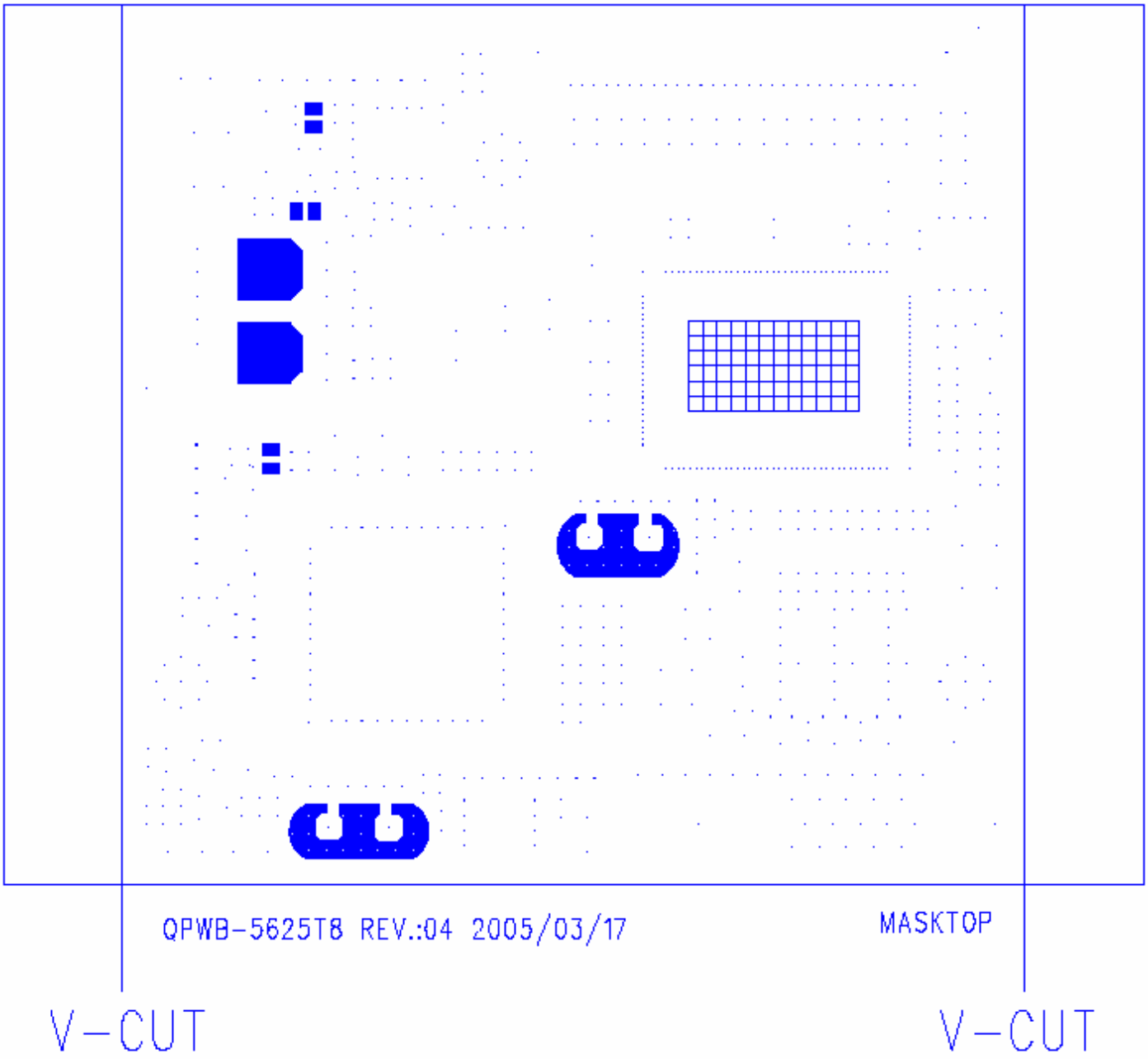
## *IF-board*

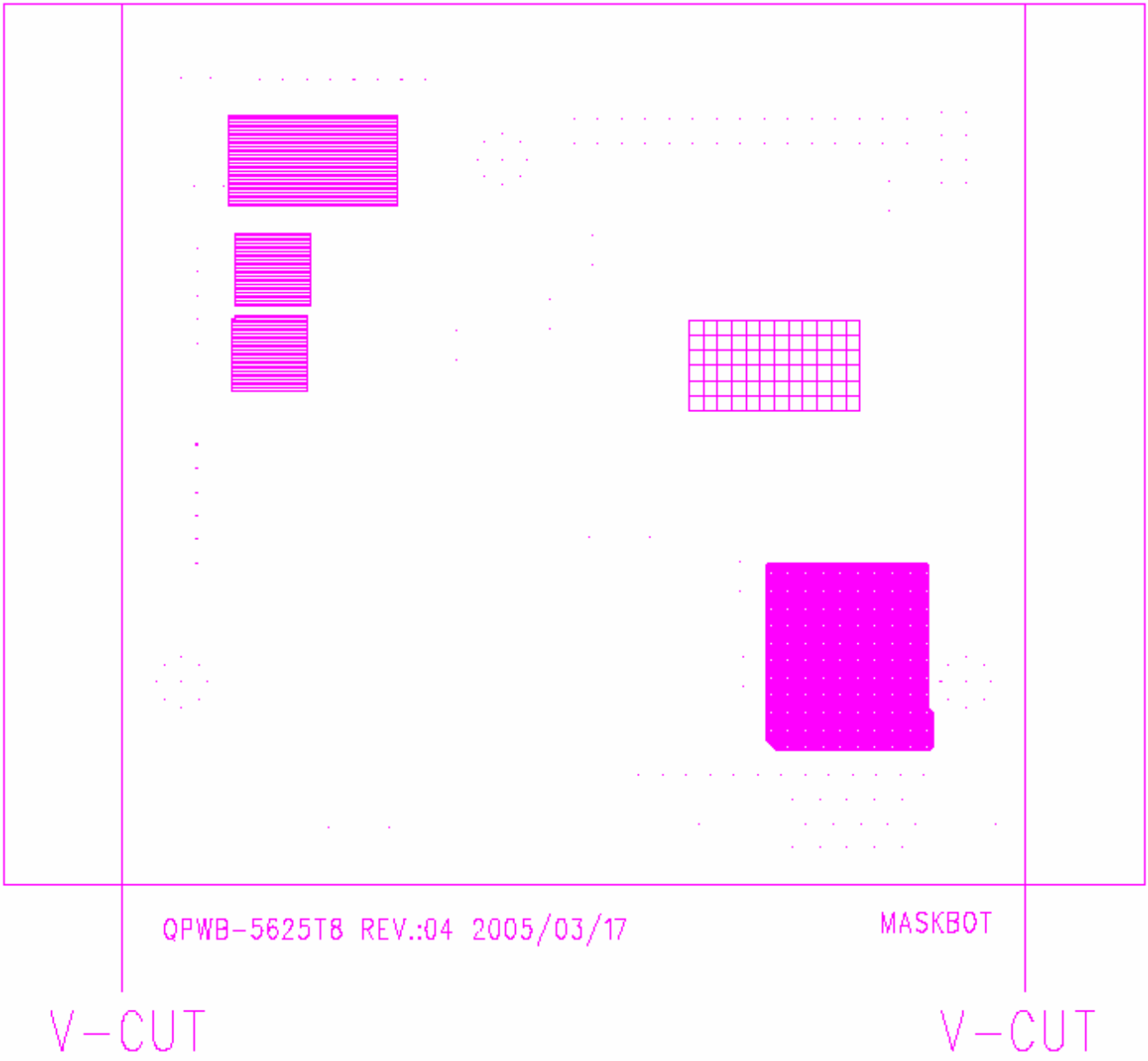



QPWB-5625T8 REV.:04 2005/03/17
SOLDER
V-CUT
V-CUT

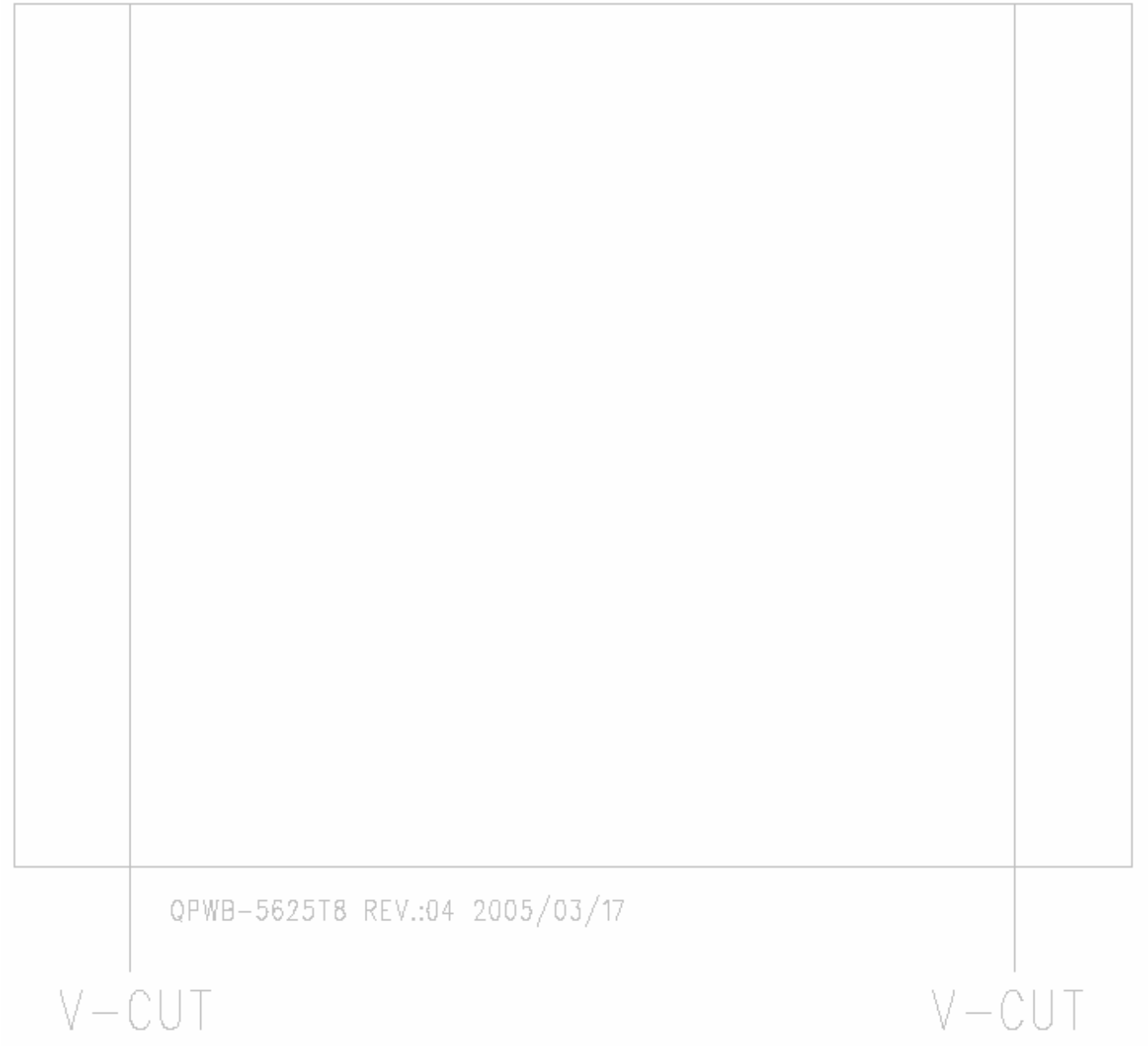


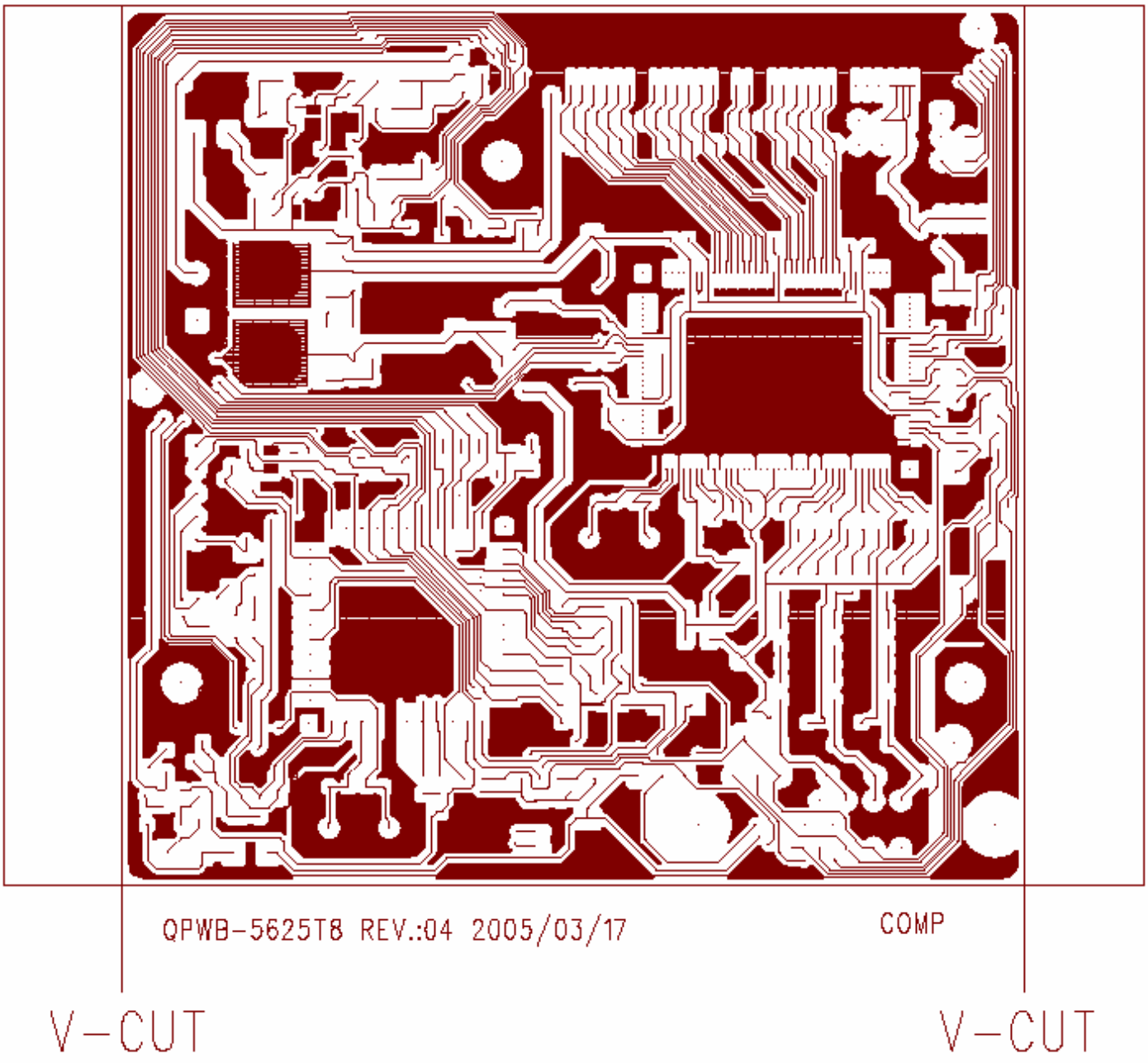

| SIZE | QTY | SYM | PLTD | TOL |
|---|---|---|---|---|
| 40 | 16 | | YES | +/-0.0 |
| 39.37 | 66 | | YES | +/-0.0 |
| 35.43 | 17 | | YES | +/-0.0 |
| 32 | 4 | | YES | +/-0.0 |
| 125.98 | 2 | | YES | +/-0.0 |
| 125.98 | 3 | | NO | +/-0.0 |
| 15.75 | 24 | A | YES | +/-0.0 |
| 157.48 | 4 | B | NO | +/-0.0 |
| 35 | 12 | C | YES | +/-0.0 |
| 20 | 61 | D | YES | +/-0.0 |
| 16 | 351 | E | YES | +/-0.0 |


QPWB-5625T8 REV.:04 2005/03/17
MASKTOP
V-CUT
V-CUT

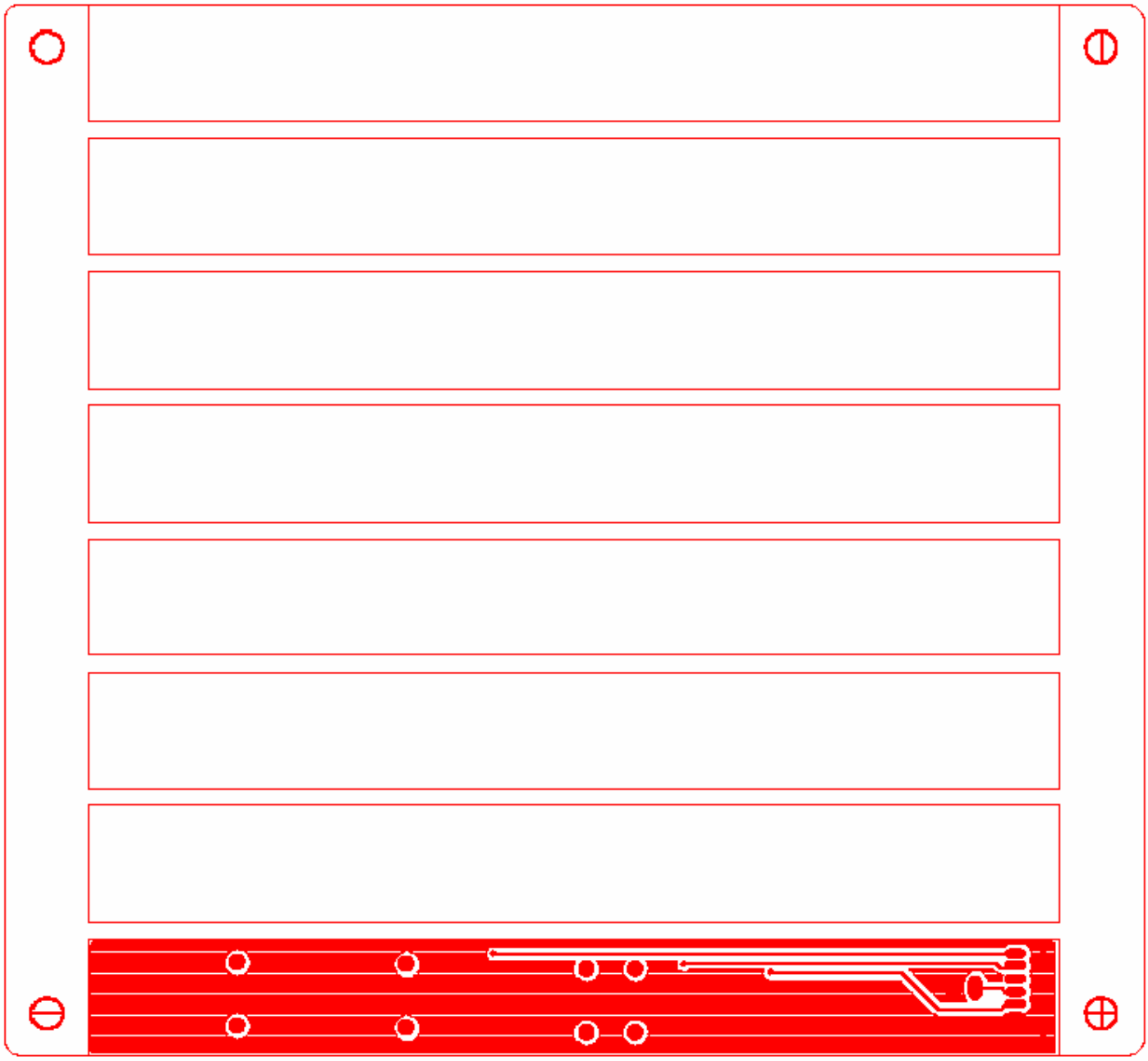

QPWB-5625T8 REV.:04 2005/03/17
MASKBOT
V-CUT
V-CUT

QPWB-5625T8 REV.:04 2005/03/17
SMDTOP
V-CUT
V-CUT

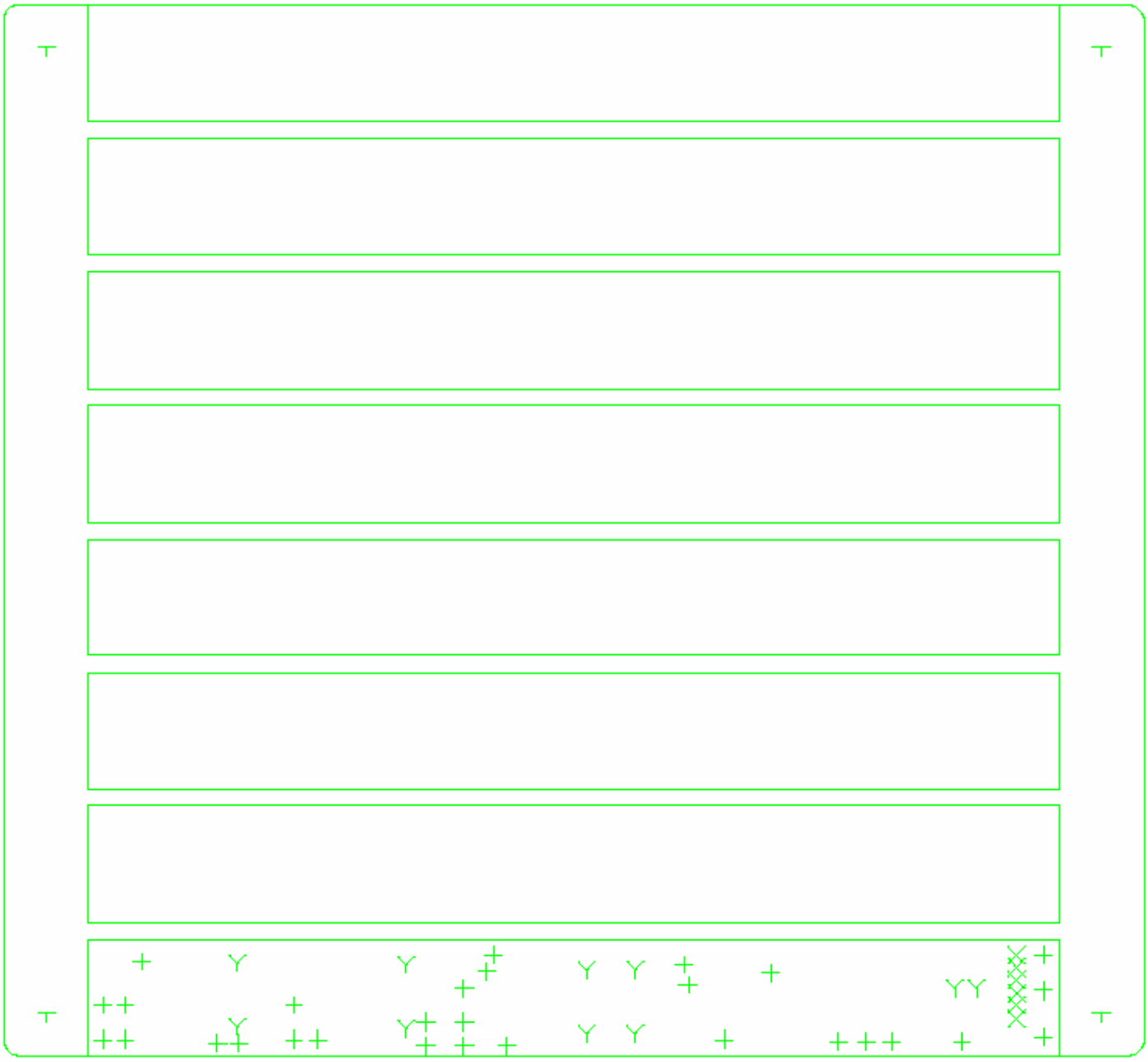

QPWB-5625T8 REV.:04 2005/03/17
V-CUT
V-CUT


QPWB-5625T8 REV.:04 2005/03/17
COMP
V-CUT
V-CUT

## Key-board

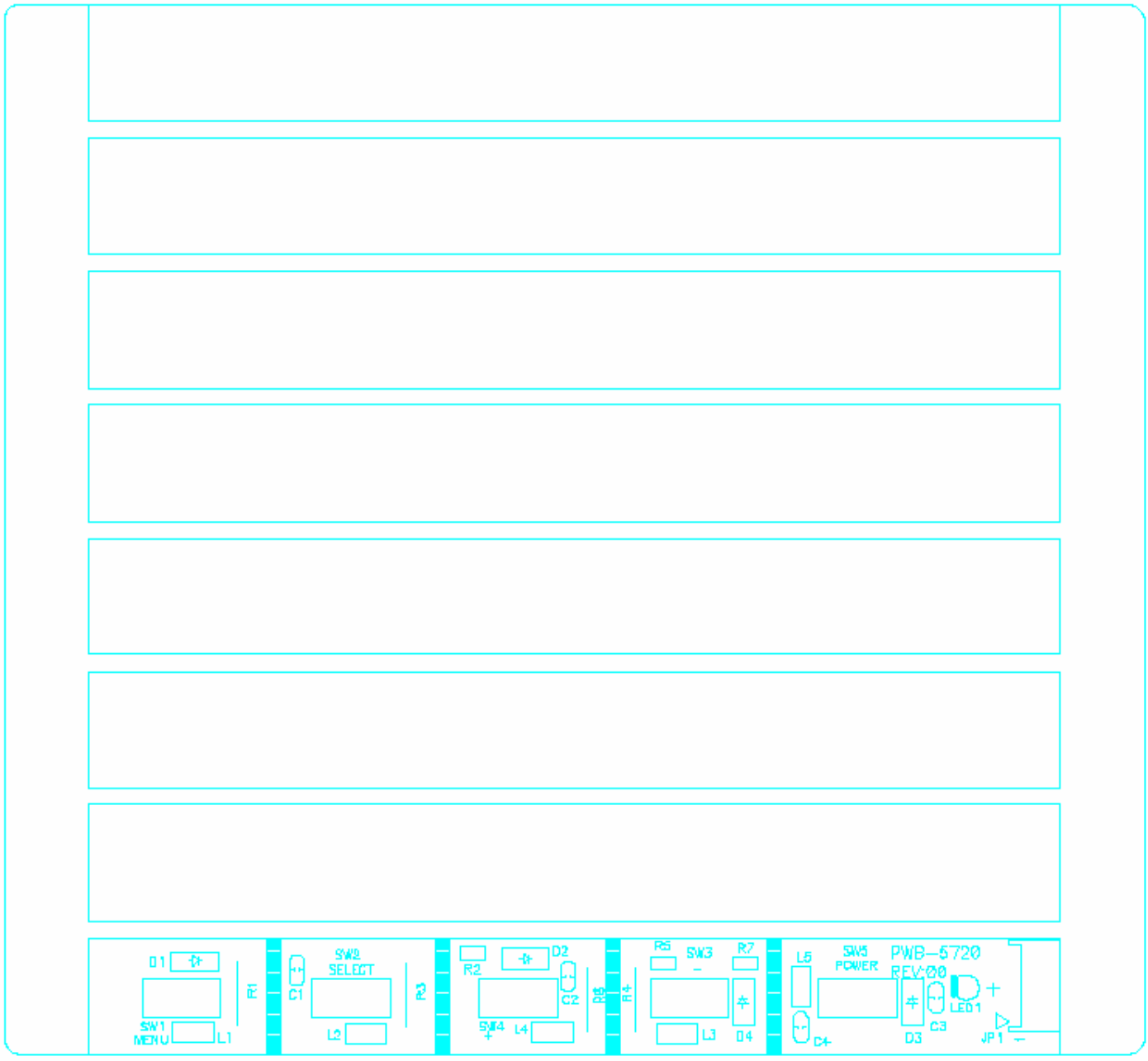


***SOLDER***



| Drill Table | | | |
|---|---|---|---|
| Hole Dia (mm) | Symbol | Quantity | Plated |
| 0.400 | + | 29 | Yes |
| 0.800 | X | 6 | Yes |
| 1.000 | Y | 10 | Yes |
| 4.000 | ⊤ | 4 | No |

***DRILL***


D1
SW1
MENU
L1
R1
C1
SW2
SELECT
L2
R3
R2
D2
C2
SW4
L4
R6
R4
R5
SW3
L3
R7
D4
L5
C4
SW5
POWER
D3
C3
LED1
JP1
PWB-5720
REV:00

***COMP SILK***

***Top***

***SOLDERMASK***

***Top Mask***

# *Reader's Response*

Dear Readers:

**Thank you in advance for your feedback on our Service Manual, which allows continuous improvement of our products. We would appreciate your completion of the Assessment Matrix below, for return to ViewSonic Corporation.**

## *Assessment*

A. What do you think about the content of this Service Manual?

| *Unit* | *Excellent* | *Good* | *Fair* | *Bad* |
|---|---|---|---|---|
| **1. Precautions and Safety Notices** | | | | |
| **2. Specification** | | | | |
| **3. Front Panel Function Control Description** | | | | |
| **4. Circuit Description** | | | | |
| **5. Adjustment Procedure** | | | | |
| **6. Troubleshooting Flow Chart** | | | | |
| **7. Recommended Spare Parts List** | | | | |
| **8. Exploded Diagram and Exploded Parts List** | | | | |
| **9. Block Diagram** | | | | |
| **10. Schematic Diagrams** | | | | |
| **11. PCB Layout Diagrams** | | | | |

B. Are you satisfied with this Service Manual?

| *Item* | *Excellent* | *Good* | *Fair* | *Bad* |
|---|---|---|---|---|
| 1. Service Manual Content | | | | |
| 2. Service Manual Layout | | | | |
| 3. The form and listing | | | | |

C. Do you have any other opinions or suggestions regarding this service manual?

## *Reader's basic data:*

| | | | |
|---|---|---|---|
| Name: | | Title: | |
| Company: | | | |
| Add.: | | | |
| Tel: | | Fax: | |
| E-mail: | | | |

**After completing this form, please return it to ViewSonic Quality Assurance in the USA at facsimile 1-909-839-7943. You may also e-mail any suggestions to the Director, Quality Systems & Processes (marc.maupin@viewsonic.com)**